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Dharmakirti's Theory of Inference

Revaluation and Reconstruction

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In this rigorous study, Rajendra Prasad examines the system of inference developed by Dharmakirti, the celebrated seventh-century Buddhist logician. In a departure from the existing body of research on Dharmakirti, which is largely historical in nature, Prasad concentrates on an analysis of Dharmakirti's philosophy, specifically his theory of inference.

Prasad uses the tools of contemporary philosophical analysis to highlight the relevance of a classical theory in the world of modern formal logic. As a result, Dharmakirti's theory emerges as more than merely a self-contained phase in the evolution of Buddhist logic. Rather, it finds its place as part of a unified and continuing tradition of logical inquiry. Armed with a contemporary understanding of the distinction between epistemology and logic, Prasad isolates Dharmakirti's system of logic and demonstrates, with sharp conceptual clarity, its elegance and economy of construction, and also its shortcomings. This focus is enhanced by the author's reliance on the two texts that contribute most significantly to his analysis. These are Dharmakirti's *Nyayabindu* in which the logician's theory of inference is distilled and crystallized and Dharmottara's commentary on the *Nyayabindu*, the *Nyayabindutika*.

A major contribution to scholarship in the field of Buddhist philosophy, the book also brings into prominence the relatively understudied figure of Dharmakirti. It will be read with great interest by scholars and students of philosophy and Buddhist studies.

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Among the author's earlier published works

Regularity, Normativity and Rules of Language (Poona University, Pune, India, 1989).

Karma, Causation and Retributive Morality (ICPR, New Delhi, 1989), *Ends and Means in Private and Public Life* (ed.) (Indian Institute of Advanced Study, Shimla, 1989).

Aesthetics, Morality and Jīvanmukti (Karnatak University, Dharwad, 1992).

Darśanaśāstra kī Rūparekhā (Shukla Book Depot, Patna; Rpt, 1993).

Varṇadharma, Niskāma Karma and Practical Morality: A Critical Essay on Applied Ethics (D.K. Printworld [P] Ltd., New Delhi, 1999).

In Honour of Rajendra Prasad

R. Balasubramanian and R.S. Mishra (eds.), *Man, Meaning and Morality* (ICPR, New Delhi, 1995).

B. Kar (ed.) *Philosophy of Professor Rajendra Prasad* (ICPR, New Delhi) (forthcoming)

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Rajendra Prasad

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With Love and Blessings
for
My Children and Children-in-law

Asha–Ajay, Pushpa–Arun, Manju
(who is still with us though we lost her)—
Vijay, Vinay–Archana and Chanchala–Rajiv who have
given me a happy home.

Purāṇamityeva na sādhu sarvam na cāpi kāvyam navamityavadyam.
Santah parīkṣyāntaradbhajante muḍhah parapratyayaneyyabuddhih.

Kālidāsa, *Mālavikāgnimitram,*
Sītārāma Caturvedī, ed., *Kālidāsa-Granthāvalī*
(Caukhambha, Vārāṇasī, 1980), pp. 240–2.

No work is good simply because it is old, nor is any bad simply because it is new. People who have the ability to judge, only after examining both, the old and the new, accept that which is the best of them, and those who do not have, follow the judgement of others.

* * *

Thus he who has raised himself above the alms-basket, and, not content to live lazily on scraps of begged opinions, sets his own thoughts on work, to find and follow truth, will (whatever he lights on) not miss the hunter's satisfaction; every moment of his pursuit will reward his pains with some delight; and he will have reason to think his time not ill-spent, even when he cannot much boast of any great acquisition.

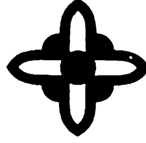
John Locke, *An Essay Concerning Human Understanding,* Vol. I, ed. A.C. Frazer
(Dover, 1959), p. 8.

* * *

Possessing opinions is like possessing fish, assuming one has a fish pond. One has to go fishing and needs some luck—then one has one's own fish, his own opinions. I am speaking of live opinions, of live fish. Others are satisfied if they own a cabinet of fossils and in their heads, 'convictions'.

Friedrich Nietzsche, *On The Genealogy of Morals* and
Ecce Homo, ed. Walter Kaufmann (Vintage, 1989),
Aphorism 317, p. 185.





Preface

My study of Dharmakīrti began sometime in 1974 when I received an invitation from the Indian Philosophical Congress to deliver its Buddha Jayanti lecture of that year at its 48th session at Allahabad University. In response to the invitation I wrote an essay on Dharmakīrti's theory of inference and delivered it. It was well received by the audience which included some of the then best known Indian logicians. Rereading it a few weeks later, however, I found it unsatisfactory in more than one respect. Therefore, I deferred its publication, in the hope of subsequently improving it. I did revise it to a degree when I used it in my UGC national lectures in 1977–78, but even in its revised form it did not entirely satisfy me. Rather, it opened up some new possibilities which required further investigation before its publication. Over the next few years despite being preoccupied with some other writing commitments, I continued to work on this theme whenever I had a break, studied several texts and related materials, made copious notes, expository and critical, and even rewrote some of the sections of the existing essay. However, as this was all done in fits and starts, I was unable to form a clear idea of where I was headed, except that I wanted to write a publishable paper for some journal or anthology.

After completing the manuscript of my *Varṇadharma, Niṣkāma Karma and Practical Morality* in early 1998, when I had nothing else on my writing agenda, I took up Dharmakīrti again, and this time with a determination to give my essay a final form and by doing so free myself from the nagging sense of an unfinished project, or, more correctly, unfulfilled obligation.

Even then, all I had in mind was the original idea of writing a paper of some kind.

However, after perusing the notes I had been making and collecting, and considering the thoughts they had generated over all these years on various aspects of Dharmakīrti's theory, when I actually began writing it soon became clear that the size of a paper would not be any better than a Procrustean bed to accommodate all that I wanted to say. Then, as the work progressed, the originally planned paper, by the natural logic of its theme, started developing into a book-length work and eventually took the shape of this monograph.

Any philosophical theme of classical Indian philosophy such as that to which Dharmakīrti's works belong, is rooted in, to adapt a term used by F.H. Bradley, a 'dense body' of 'tradition'. I have deliberately not sought to delve into this tradition, or even into the classical Indian logical tradition. I have confined myself exclusively to Dharmakīrti's theory of inference, which I call his logical theory, or logic, and have discussed it, to use another Bradleyian term, without any 'ancestral prejudice'.[1] I have tried to present the theory, as propounded by him in his *Nyāyabindu* and as elaborated by Dharmottara in his *Nyāyabindutīkā*, as systematically as it permits. In doing that, I have used some ideas from modern logic but have been careful to ensure that none of them mars, even to the slightest degree, the texture of his theory, or its elegance.

I have however also been critical of some aspects of the theory. For example, I have questioned the following: Dharmakīrti's central thesis that logic is a worthwhile field of inquiry only, or primarily so, because it is a necessary means for the acquisition of any object of any desire; his division of inference into inference for oneself (*svārthānumāna*) and inference for someone else (*parārthānumāna*), and his mode of distinguishing between the two; his attribution to each of them the power to yield knowledge which is both new and uncontradictable; his classification of inference with a negative conclusion into eleven forms; his proof of the completeness of his theory of inference with the three and only three types of *hetus* or premise-sets; his claim that every inferential fallacy occurs because there is something wrong with the *hetu*, or premise-set, of the inference concerned, the independence of some of the fallacies mentioned by him, etc. On the positive side, I have demonstrated that every inference involves the use of language, that each of the three types of inferences he admits of is formal and deductive, and that his mode of characterizing a permissible premise rules out the possibility

[1]F.H. Bradley, *Appearance and Reality* (Oxford, 1946), p. x.

of a false proposition implying any other proposition and of a true proposition being implied by any other proposition. I have also shown the completeness of his theory of inference within a limited area and have sought to identify some aspects that need to be modified or reconstructed in order to overcome some problems or objections that currently arise.

On the interpretative side, I have felt inclined, on some occasions, to reject Dharmottara's elaborations of some of Dharmakīrti's ideas, though, by and large, I have found the former illuminating and have depended on them in my understanding and interpretation of the latter. I have however shown the untenability of some of the claims that a large number of modern interpreters have made regarding classical Indian logic as a whole, including those for Dharmakīrti. They include, for example, the well-known claims generally accepted at face value, that inference, particularly inference with regard to someone else, as conceived by classical Indian logicians, is always in the form of Aristotle's Barbara; that it is neither deductive nor inductive but both, or neither, etc. I have shown that Dharmakīrti's inference regarding someone else is formal deduction but cannot be described as an instance of Barbara for more than one conclusive, logical reason. From this it also follows that it is not both deductive–inductive, nor either. My intention is not only to present Dharmakīrti's theory at its best but also to revaluate it along with a few reconstructive suggestions which, if introduced, are likely to add to its existing brilliance.

It is true that Dharmakīrti does not present his account of any one of the three types of inference, which he considers the basic types, in a form indicative of its being a formal mode of reasoning. However, each of them is a formal mode because any inference expressed correctly in the form prescribed by him for it would be valid. This is true of even other classical Indian logicians' basic types of inferences. This appears to be because they did not think it necessary to exactly demarcate the spheres of logic and epistemology, and consequently considered a valid inference of any type to be a source or form of knowledge. This epistemic bias, using 'bias' in a non-pejorative sense, was so strong that they considered the conclusion of even a clearly deductive inference as communicating some new information not already communicated by its premises. Inductive inference is, while deductive inference is not, communicative of new information, but they believed that every inference was so. Rather than emphasizing the importance of the distinction between the two, and seeking to make a case for the classical Indian logicians' intention of justifying an attribution of the knowledge-

giving ability only to inductive inference, modern interpreters of classical Indian logic glorify the classical logicians' general, apparently bald, claim that inference as such is knowledge-yielding, on the alleged ground that the same inference, as they conceived it, is both deductive and inductive. Therefore, they go on to maintain that the classical Indian conception of inference is more comprehensive and consequently superior to the Western, according to which the same inference can be either deductive or inductive but never both. Some believe that this sort of interpretation is patriotic but it actually amounts to attributing a great sense of confusion to classical Indian logicians and to admire them for having it, as the same piece of inference cannot be both deductive and inductive. Besides, it is obvious, but not unimportant, to point out that patriotism has no place in interpreting or setting out the contribution of a thinker from one's country or region, whatever the subject.

The bulk of the existing studies on classical Indian logic are non-critical or defensive. A reader fed largely on these, or imbued with 'ancestral prejudice', may misconstrue my critical remarks as accusing the saint–philosopher Dharmakīrti of having committed some serious error and on that account may charge me with heresy. I hope that even a cursory reading of the book as a whole will bring the realization that by dropping the charge he will not be offending his logical conscience or concurring with anything that is unfair. Besides, if he goes on to address his attention to the issues commented on, he may even be convinced that the critical remarks have been made primarily to make visible the structure of Dharmakīrti's theory as it really is in essence, rather than an attempt at nit-picking. I would in the end like to draw his attention to the important remark, extremely relevant to our appraisal of the contribution of any great philosopher, made by J.L. Austin in his own inimitable style: 'In philosophy there are many mistakes that it is no disgrace to have made: to make a first-water, ground-floor, mistake, so far from being easy, takes one (*one*) form of philosophical genuis'.[2] If I have uncovered any errors of Dharmakīrti, they will be such that only a philosophical genius, which he really is, can commit.

Not much work has been done on Dharmakīrti's theory of inference. One reason for this is the great importance given to the *Nyāya* (including neo-*Nyāya*) theory; indeed to such a degree that it is quite often referred to as the Indian theory of inference. Even in those parts of the country where, to be considered an expert in any branch of classical Indian

[2] J.L. Austin, *Philosophical Papers*, ed. J.O. Urmson and G.J. Warnock (Oxford, 1969), p. 153.

philosophy, a study of Indian logic is considered essential, people generally focus on *Nyāya* logic. Generally, those writing on a theme discussed by some Buddhist (or non-*Nyāya*) logician, or logicians, look at it through a Gautama's eyes, or through a Gangeśa's eyes, or through one eye of a Gautama and the other of a Gangeśa.

I have made no attempt to show how Dharmakīrti's theory compares with any *Nyāya* theory, and nowhere in the work have I discussed Dharmakīrti's, or any other Buddhist logician's, debate with a *Nyāya* logician. That form of comparative study has already been undertaken by other scholars. Such studies generally centre around some epistemological, or a mix of epistemological–logical, issues, and are therefore not suited to highlighting Dharmakīrti's logical contributions of Dharmakīrti or even those of a *Nyāya* logician.

Writers on Buddhist logic generally prefer to speak of Buddhist logic, or the Buddhist theory of inference, and very little about a particular Buddhist thinker's logic or theory of inference. There is a general trend among modern writers on Buddhist, or any other system of classical Indian logic or philosophy, to comprehensively discuss the views held by a school or system of philosophy, or even some specific aspect of it, for example, those of the *Nyāya*, Buddhism, Advaitaism, etc. Their focus is not on the views of a particular philosopher or philosophers. There are exceptions of course, but, as is true of exceptions, those are few and far between. It is because of this approach that there are not many works focusing on the contributions of individual thinkers in Indian philosophy. It might be easier to write about schools of philosophy, but this negates serious philosophical study because it focuses on only the general foundational ideas of a school rather than the particular insights of individual philosophers which may differ from those of the others. In this work, my objective is to present Dharmakīrti's logic as an individual logician's work *per se*, and not in relation to anyone else's nor as the logic of a school. Anyone familiar with the work can easily see where it stands in relation to the relevant works of other logicians, Indian, or Western. I have proceeded with no prejudice for or against any particular school of logic, Indian or Western. I have generally avoided comparisons because these would tend to distract the reader's attention from the contributions of the very philosopher whose thought is central to this work.

Although the bulk of the existing secondary literature is not very great, I have not made much use of it either in the presentation or comment on his views. Some of it was not available to me. The works that were accessible appeared to have been written in the style of Orientalist, or

Indological, scholarship, and did not fit in with the logical analysis and appraisal that my project entailed. For me, the sparseness of the available, utilizable, secondary materials proved to be a blessing in disguise. I could devote as much of my time and thought on Dharmakīrti's views as I found necessary to reassure me, rightly or wrongly, that I was understanding him correctly. That this work was largely the result of my direct encounter with him through, as I have already said, his *Nyāyabindu* and Dharmottara's *Nyāyabindutīkā*. Therefore, to all intents and purposes, I have driven my bullock-cart almost without any clear hoof-mark on the road to guide me to the Dharmakīrti I have reached. I think I have reached the real, historical, Dharmakīrti, but if, by ill-luck, the one I have got to is not the real one, it will have entirely been my own fault and not due to the misguidance of anyone else whether or not it is the correct interpretation of Dharmakīrti's theory of inference I would request readers to give it serious consideration, for I have little doubt they will find in it much that is insightful, elegantly structured, and thought provoking. If I have not succeeded in presenting Dharmakīrti's theory as the historical Dharmakīrti would have, I have approached his formulation as an open-minded analytical philosopher would have rather than as a historian of ideas or logic.

Limiting the area of the work so strictly has not made, nor was intended to make, my job in any way easier. On the contrary, it has made it more difficult. Given that Dharmakīrti's theory of inference, as set in *Nyāyabindu*, being a small and neatly-bounded zone because of its precise and terse formulation, I had always to be alert in order not to overstep its boundaries and say something which did not really belong to it. I must however confess that the abundant and constant need to exercise caution has also made the exercise greatly enjoyable.

The choice of title for the work, *Dharmakīrti's Theory of Inference*, though it is only his theory of inference as propounded in *Nyāyabindu* and elaborated in *Nyāyabindutīkā* need not be objected to because it is his theory in its best form, and because it is not I alone who have used a general title for a specialized work. Indeed, others have been even more ambitious. For example, Stcherbatsky's *Buddhist Logic*, Vol. II (Dover) is only a translation of *Nyāyabindu* and *Nyāyabindutīkā*, yet he entitles the volume '*Buddhist Logic Vol. II*' and not simply Dharmakīrti's logic. R.S.Y. Chi does a similar thing with Dignāga's *Hetu Cakra*, studying it in the manner of a formal logician. Similarly, K'uei-chi's commentary on *Nyāyapravesa*, a work of Śankarasvāmin, a student of Dignāga, presented aspects of Dignāga's logic in a summary form and entitled his formal logical study *Buddhist Formal Logic* (Royal Asiatic Society of Great Britain,

1969, Motilal, 1984), though it is a study of only one of Dignāga's, works. My title is much more modest as I do not entitle the work 'Buddhist Logic', or 'Buddhist Formal Logic', but only 'Dharmakīrti's Theory of Inference', with the disclaimer that it is not a complete work on the theory taking into account all his writings.

In presenting, as well as in commenting on, Dharmakīrti's views I have tried to minimize, to the extent possible, the use of technical language. Wherever any technical term has been used, its meaning has been explained, not only on the occasion of its first occurrence, but elsewhere too in order to make the discussion intelligible and to avoid putting undue strain on the reader's memory. In some contexts, to clearly convey a logical point being made, I have used some modern logical symbolism. To understand the latter, familiarity with modern elementary logic will be sufficient. But even this level of knowledge of modern logic is not absolutely essential because every logical point that has been made through logical symbolism has also been explained in ordinary language. Indeed, to understand the logical points made in the book, the reader does not need any training either in classical Indian logic or in modern symbolic logic: he needs only a good logical common sense. This is not at all an unusual requirement because one needs it to properly appreciate or understand, any cognitive enterprise. He who has it will, hopefully, not only see what this enterprise aims at, why it aims at it, and how it tries to achieve it, but will also enjoy the intellectual exercise he has to engage in, in order to see all this, whether or not he agrees with its conclusions, or with its analysis or the reasoning advanced to back it.

I have throughout employed a modern analytical-philosophical approach in presenting and discussing Dharmakīrti's views in order to ensure precision and clarity. That is very much in line with the nature of my theme because Dharmakīrti's style of writing too is as analytical as a good logical writing should be. I have also taken every precaution to ensure that my account of his ideas is accurate and faithful to his intentions. In approaching his work I have not used present-day logic as the yardstick or standard for measuring his achievements. Notwithstanding my employment of formal modern techniques and procedures, nowhere have I attempted to read into Dharmakīrti's writings anything modern which is non-existent. Modern logical techniques have been used only to make clearly visible the structure of his theory, or of his reasoning in order to make some important logical observations.

However, if I have expressed in a modern way what Dharmakīrti has said in the classical way and thereby made the latter easily comprehensible

and useful to a modern philosopher, without in any way distorting the theory, there should be no objection. This approach seems to me preferable to the other which presents classical ideas in classical ways. The latter is likely to turn classical ideas into curios and to offer little help in making them usable in current philosophical practice. The approach followed here seems to have the advantage of bringing back into current philosophical use at least some of the ideas and techniques of Dharmakīrti's logic. It may arouse controversy, but that should be welcome because controversy provides an impetus for the past to enter into the present even if someone smells in all this an element of presentism. In every theory there are at least some important elements that are timeless in the sense that they are discussable and usable in the language and thought of every age and are not bound to the time of their enunciation. Such elements are abundantly present in Dharmakīrti's theory.

Dharmakīrti's logical theory contains both philosophical and formal logic: the former in justifying the equation of epistemic value of inference with that of perception, in justifying the non-necessity of mentioning the conclusion in an inference for someone else, etc., and the latter in stating the different forms of inferences, in prescribing how to characterize the three features of the *hetu*, etc. I have explicated in a conceptual–analytic way his philosophical reflections on the method of inferring and formally demonstrated the issues that belong to his formal logic, or those that can be made formal. In all this, I have sought to make his philosophical as well as formal logic intelligible even to one who may not have the time to read his original formulation.

I have been careful to avoid overloading the text with footnotes and quotes. Even *Nyāyabindu* and *Nyāyabindutīkā* have been referred to, or quoted from, much less frequently than writers on classical Indian philosophy are generally wont do. I have resorted to it only where I felt that the point or points made by Dharmakīrti or Dharmottara are distinctive and very crucial, and therefore the reader should be given an opportunity to enjoy their logical insight and refinement by having an acqaintance with what they have said in their own words. The same policy has been adopted in relation to references to works in English.

Abbreviations for some Sanskrit terms have been used to save space, and what an abbreviated form stands for has been shown at more than one place. Besides, a list of abbreviations and a glossary of Sanskrit technical terms have been provided at the end of the book which the reader may consult if he needs to. Some Sanskrit words have been used within the body of the book in parenthesis, but as their English equivalents have also been invariably given alongside, the reader who is unfamiliar with

Sanskrit may ignore them without loss of comprehension. In the event of a Sanskrit term being used without the English equivalent in the vicinity, there is always the glossary to fall back upon. Sanskrit terms and quotations have throughout been given in Roman script, with diacritical marks, to make them readable even by those unfamiliar with the Devanāgarī script. Sanskrit quotations have been given in the footnotes which a reader unfamiliar with Sanskirt may ignore. Translations have been given immediately below them, and an attempt has been to make them conceptually clear and faithful to the original and not just literal.

A word about the use of gender-specific pronouns 'he'/'she'. The current practice in Anglo-American works is to use 'she', against the earlier use 'he', when the pronoun is needed to refer to a person, a human being, irrespective of gender in order to reverse the traditional masculine bias. In line with my earlier works I have adhered to the traditional use of 'he' in such cases, not through any gender bias! but habit and convenience.

It is a matter of great pleasure for me to record here an extremely affectionate pat on the back of my little grandsons, Rahul and Rohit, who are not at the moment in the country to physically receive it, for invariably keeping my stock of stationery well-supplied by bringing useful and enjoyable items from Muscat which is not usually the case with boys of their age, and also not playing with my writing equipment which boys of their age generally do.

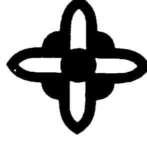
I am extremely grateful to Oxford University Press, particularly to the Managing Director, Manzar Khan, for publishing the book. I would also like to thank the OUP editors. I very deeply appreciate their assistance and express my gratitude to them.

For any errors that there may be in the book, I alone am responsible.

Rajendra Prasad

Rajendra Nagar
Patna





Contents

ONE

Introduction

1. Dharmakīrti and His Works

Dharmakīrti was a seventh century Buddhist logician. When exactly during that century he lived and wrote his books is not precisely ascertainable, and this is true with most of the classical Indian philosophers. That we cannot accurately date his life-history does not matter very much here because the focus of this work is not intended to be the history of Buddhist logic, or any particular aspect of it, or even on the historical development of Dharmakīrti's views on logic.

Most scholars of Buddhist logic, or of Indian logic, consider Dharmakīrti (DK) to be the most distinguished logician of the later phase of Buddhism, and, by any standard, he is one the most distinguished among classical Indian logicians. His works are as follows: *Pramāṇavārtika; Pramāṇaviniścaya; Nyāyabindu; Hetubindu; Sambandhaparīkṣā; Vādanyāya;* and *Santānāntarasiddhi.*

Though none of his works can be described as philosophically weak, *Nyāyabindu* surpasses all the rest for conciseness, precision, systematic development and rigour, without a hint of opaqueness or unintelligibility. DK is creatively analytical in presenting his views on almost all the topics he chooses to discuss therein. It comprises three chapters. The first discusses the nature and kinds of knowledge or organs of knowledge (*pramāṇa*) and in detail the nature of perceptual knowledge (*pratyakṣa*). The second cites the forms of inference or inferential knowledge (*anumāna*) and discusses in detail the nature of inference for oneself (*svārthānumāna*),

that is, of inference drawn by an inferer for his own cognitive benefit. The third is a detailed analysis of the nature of inference for someone else (*parārthānumāna*), that is, of inference presented by the inferer to another person to demonstrate to him the truth of a proposition (or cognition) the inferer himself is convinced of. In each one of the three chapters, some related or consequential issues have also been discussed.

I have concentrated on the main body of his theory of inference to highlight his contributions to logic *per se*, and not just to *Indian* logic. With this end in view, I have not only not talked about any of the several peripheral or consequential issues discussed by him but also have completely left undiscussed his theory of perception. I have adopted this course because when I was writing the book I had, and do still nurture, the fear that in a work dealing with both his theory of perception and his theory of inference, his contribution as a logician may not be properly demonstrated, and that such a work might foster in the reader a feeling that in classical Indian philosophy, the boundaries between epistemology and logic are not as clearly demarcated as they should have been.

2. The Importance of *Nyāyabindu* and of Dharmottara's Commentary *Nyāyabindutīkā*

Usually it is wise to discuss a philosopher's views on a topic on the basis of all his works that deal with it rather than on the basis of a single one. This is however not always the best course to adopt. It is the best course, or the only reasonable course, if one aims at giving an account of the historical development of his views on the chosen theme or topic, and when his views presented in one work have undergone some change or changes in later ones. On the other hand, when one wants to present his final or conclusive views on a theme or on a cluster of themes relating to a particular area of thought, in their neatest and best-structured form, and such an account is available in a single work of his, it is fair to concentrate on that. This is the case with DK. His theory of inference, which I have called his logical theory, is available in its most systematic and organized form in *Nyāyabindu* (NB). That is why I chose to present his theory almost exclusively on the basis of what he says in this work about inference and some related issues, and on the elaboration of his views by Dharmottara (DU), an eighth-century logician, in his *Nyāyabindutīkā* (NBT),[1] an explicative–analytical commentary on NB. I have made use

[1]All references to *Nyāyabindu* (NB) and *Nyāyabindutīkā* (NBT) are to the texts in Śrīnivāsaśāstrī's (SNS's) *Nyāyabindutīkā*, a Hindi translation of NB and NBT (Sahitya Bhandara,

of DU's explications-elaborations because they deal primarily with the philosophical, conceptual content of DK's assertions and only rarely, or casually, with their grammatical or linguistic aspects. Generally, they deal with the latter only when a grammatical, or linguistic, analysis helps to clarify a philosophical or conceptual point.

DU has, of course, sought to present DK's views in the best light but also he has taken pains to remain faithful to the master's intentions in saying what he has said of them. He does not try to foist on DK some view of his own, or to take him in a direction in which he himself has not gone, but, according to DU, he should have gone. He does not even say anywhere that DK has really gone in this or that direction without realizing that he has, or without seeming that he has.

As I will not only present DK's theory of logic but also some critical observations on a few of its important aspects, academic fair play demands that I take the theory at its best. NB and NBT, taken together, do make it available to us in its best, or strongest, form. The tradition also ranks NB as the best among DK's works and NBT as the best among the philosophical, or conceptual, commentaries on NB. Buston,[2] a modern historian of Buddhism, remarks that DK wrote *Pramāṇaviniścaya* for the average reader, *Pramānavārtika* for that of a dull mind, and NB for that of an intelligent mind. I am told that a saying of this kind was current among classical Indian, or Buddhist, logicians.

Durbeka Miśra, a tenth-eleventh century logician, wrote a commentary on the NBT, entitled *Dharmottarapradīpa* (K.P.J. Research Institute, Patna). After reading it I found that for my purpose NB and NBT were sufficient and therefore have referred to *Dharmottarapradīpa* only very occasionally.

My account of DK's logic will be interspersed with comments. Though I will not ignore any, I will generally comment on those aspects that are important in a broad sense, that is, in terms of any logical theory of inference, or at least for any propounded in the general setting of classical Indian philosophies. Secondly, I shall specifically comment on those aspects, or general features, that modern interpreters of Buddhist, or rather, Indian, logic, appear to have got wrong. However, my

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Meerut, 1975). The English translations given in this work do not literally follow SNS's Hindi ones, nor Th. Stcherbatsky's (St's) English ones given in his *Buddhist Logic*, Vol. II (Dover, 1962). The former are definitely better than the latter, though quite often too literal; the latter are generally difficult and in a number of places conceptually unclear or odd.

[2]Buston, *History of Buddhism* (Heidelberg, 1931), p. 85. Referred to by SNS, NBT, Introduction, p. 9.

objective throughout will be to present the reader with a neat and clear picture of DK's logical theory as a logical theory, without any metaphysical, psychological, or religious frills. The comments are intended to help him see the structure of the theory in its proper perspective.

I will generally refrain from any comparisons of DK's views with those of other logicians, Indian or non-Indian. References to other logicians' views, therefore, will be few and far between, and occurring only when they help me in clarifying any aspect of DK's theory or some general logical point. I will, however, attempt to point to the inaccuracies in the interpretations by modern scholars, comparative or non-comparative, of some features of DK's logic or of Indian logic, which have gained widespread acceptance. I will also be discussing DK's theory as a logical theory in its own right, and not as a constituent of the history of Buddhism or Buddhist philosophy. By not taking his historical background into consideration I do not mean to deny the truth that every thinker or theory is rooted in time. If I have not delved into this, it is merely because my primary interest lies in ascertaining and characterizing what his theory of inference is and not in ascertaining or characterizing its relationships with other theories of inference. I will also attempt to assess the degree of success with which it answers the problems it raises, or the problems that any viable theory of inference ought to answer. Therefore, some of my comments will, I hope, convey a wider sense and help us in understanding some other classical Indian theories of inference which share with DK's the features that have occasioned those comments.

In the context of critically discussing a classical Indian philosophical theory, it is necessary to clarify, that to make a critical remark on a theory is definitely not to do it any dishonour. Rather, it is an academic way of paying one's respect to its philosophical worth. The natural source of the motivation to comment on a theory is generally the commentator's high estimation of its philosophical merit. I say this because there is a feeling amongst a wide range of modern Indian scholars of classical Indian philosophies that the best thing we can do about them is to state, describe, or report, as accurately as we can, what their classical proponents say or maintain, but to avoid criticizing them. One reason for this attitude is what I call elsewhere,[3] the *Ṛṣi* bias, that is, the bias that our classical philosophers, being *Ṛṣis*, venerable seers of truth, are not prone to any error, and the second is that to criticize a venerable *Ṛṣi* is to disrespect him. It needs no saying that neither of these is a valid 'reason' that is, a rational consideration, but sheer prejudices or superstitions. We can call

[3]See ch. II of my *Varṇadharma, Niṣkāma Karma and Practical Morality: A Critical Essay on Applied Ethics* (New Delhi, 1999).

a classical thinker a *Ṛṣi* and still criticize a view held by him because to criticize is not the same as fault-finding and therefore does not show the holder or propounder of a view any disrespect.

3. 'Inference' and '*Anumāna*'

A word about the use of the English word 'inference' for the Sanskrit term '*anumāna*'. I have used the former for the latter, as is the normal, current, practice among those who write or have written in English on classical Indian logic or philosophy. Many however do it grudgingly because they think that 'inference' is not the right word for '*anumāna*' and that it has to be used because there is no better English equivalent. It seems to me that 'inference' is not as inappropriate an English term for the latter as it has been accused of being. Both 'inference' and '*anumāna*' signify a logical or epistemic act which authorizes one to believe or say something on the basis that one has believed or said something else. Western theories of inference may be different from Indian theories of *anumāna*, but that does not mean that the Western and Indian theories are about different subjects. Not all Indian theories of *anumāna* are exactly alike and yet we say that they are all theories about the same subject, and that is the case too with Western theories of inference. Indeed, this is so in relation to virtually all the subjects on which philosophers theorize. The Buddhist theory of the Self is very different from the *Nyāya* theory, and both are equally different from the *Sānkhya* theory, yet we hold that all three are theories of the Self. Therefore, if Western theories of inference differ from Indian theories of *anumāna*, that is not a good enough ground for saying that 'inference' cannot be used as the English equivalent of '*anumāna*'.

D.M. Datta[4] offers two reasons for the inappropriateness of 'inference' as an equivalent of '*anumāna*': (1) What is called immediate inference in Western logic cannot be called *anumāna* because in every *anumāna* there must be a *vyāpti*, a universal proposition stating a relation of invariable concomitance between the *pakṣa* (the thing something is inferred to be true of) and *sādhya* (the thing that is inferred to be true of the *pakṣa*), Yet in Western logic no *vyāpti* is used to draw an immediate inference. (2) Secondly, in Western logic, inference denotes all forms of mediate knowledge, but in Indian logic *anumāna* is only one form of mediate knowledge, the others being *upamāna* (comparison), *śabda* (verbal testimony), *arthāpatti* (postulation), etc.

It is true that Indian logic does not offer a theory of immediate

[4]D.M. Datta, *The Six Ways of Knowing* (Calcutta University, Calcutta, 1972), pp. 204–5.

inference, but that does not mean that Indian logicians do not use immediate inferences, or that they are unaware of their logical role. We will see that both DK and DU say that the proposition, 'Whatever does not have fire does not have smoke' says the same thing in a negative way which the other proposition, 'Whatever has smoke has fire' says in an affirmative way, because each of the two is obtainable from the other; they are only verbally different. They do not use any term for 'contraposition' or 'transposition', but they do use the logical technique of contraposition or transposition in deriving one from the other, or in asserting that one says negatively what the other says affirmatively. If they do not attach much importance to such inferences or derivations, that should not surprise us. Even Aristotle, who presents a theory of immediate inference, does not consider immediate inferences very important.

As regards the equation of inference with mediate knowledge in Western logic, we can say that even Buddhist logic does the same thing. Every kind of mediate knowledge, that is, any knowledge which is not perceptual, that is, immediate, is, for it, *ānumānika* (inferential). This implies that then even the Buddhist '*anumāna*' should not be called *anumāna*. However, neither Datta nor any other modern Indian writer realizes this implication, or grudges DK's, or any other Buddhist's, inclusion of all mediate knowledge in *anumāna*.

A recent writer, Douglas D. Daye,[5] also claims in a slightly different way, that 'translating "*anumāna*" as "inference" misleads the general reader and skews their expectations about PA'. By 'PA' he means *anumāna* drawn for someone else, or even *anumāna* as such. He offers two reasons in support of this claim, one of which is his own and the other he derives from Karl Popper. The first reason is that cognitions, and not the sentences or propositions, occurring in an *anumāna*, as conceived by classical Indians, are the bearers of truth-values. On the other hand, according to the Anglo-European, that is, Western, conception of inference, the bearers of truth-values are the latter, that is, the sentences or propositions occurring in an inference.

This generalization about the Indian conception of *anumāna* appears to be based on a misunderstanding. Indian logicians do sometimes talk in terms of cognitions when they explicate the notion of *anumāna*, but they do not mean to say that an *anumāna*, drawn for oneself, or, for

[5]Douglas D. Daye, 'Some Epistemologically Misleading Expressions: "Inference", and "*Anumāna*", "Perception" and "*Pratyakṣa*"' in B.K. Matilal and J.L. Shaw (eds.), *Analytic Philosophy in Comparative Perspective* (D. Reidel, 1985), p. 232.

someone else, is just a causal procession of cognitions. They say, for example, that when one cognizes smoke emerging from a hill, then, recollecting the previously acquired truth that wherever there is smoke, there is fire, he draws the conclusion that there is fire on that hill. This does not mean that they treat the inference of fire from smoke as a cause–effect phenomenon in which the cognition of smoke causes the recollective cognition of there being universal concomitance between smoke and fire, and the two cognitions jointly cause the cognition of fire on the hill. It is not a case of concluding, or inferring that there is fire on the hill if there is a causal process. A causal process happens, whereas an inference is knowingly or voluntarily drawn. Inferring is a deliberate, intentional, logical or epistemic act which the inferer performs. When he concludes that, (c) the hill has fire, he does that on the ground that, (a) the hill has smoke, and (b) whatever has smoke has fire. The latter two are the grounds and not the causes, of the conclusion. To use (a) and (b) as the ground for believing, or asserting, (c) is to think in a conceptual way, that is to think of what (a) implies, what (b) implies, and what (a) and (b) jointly imply. This conceptual exercise is bound to be linguistic, or propositional, because to draw what (a) and (b) singly or jointly imply is to find out what can be said, or what cannot be said, when one says what (a) signifies and what (b) signifies. Saying does not necessarily mean speaking or vocalizing, and therefore the process of drawing the implication of (a) and (b), which is nothing other than drawing the conclusion drawable from them, can very well be done in a sub-vocal way. Therefore, *anumāna* may be done in a sub-vocal, unspoken, way, but that would not mean that it is only a psychological process in which some cognition or cognitions cause another.

Daye's second reason, derived from Karl Popper, is that a logically acceptable inference, in accordance with Western logic, has to be only formally valid. However, a formally valid inference, for example one in which one or both of the premises are false, would be called a fallacious or pseudo-*anumāna* (*anumānābhāsa*) in accordance with the Indian conception of *anumāna*. I would like to point out that the notion of formal validity is not missing in the Indian theory of *anumāna*. Every *anumāna* has to be formally valid but every formally valid inference may not be a genuine *anumāna*. This is so because an inference with a false premise may be valid in Western logic, but not in Indian logic because the Indian concept of a premise, as will be explained in Chapter 3, is such that a false proposition cannot be a premise in any *anumāna*. Every *anumāna* has to be formally valid, that is, its premises must entail its conclusion, and has to have only true (and relevant) propositions as its premises.

Popper, as quoted by Daye, says that 'A Western logician views the "inference" all animals are pigs; all pigs have wings; therefore all animals have wings' as formally valid, though unsound. ... The *Naiyājika's* view of this example is that it is a *nyāyābhāsa*, something which is only apparently an argument but really is not. It is, in short, ill-formed because its members are known to be false.'[6]

What Popper says in the last sentence is the truth. Not only the *Naiyāyika*, but all Indian logicians, including Dharmakīrti, would call it an ill-formed, a deceptive, *anumāna* because its constituents are false, that is, because none of its constituents is true. It would be ill-formed even if a single one of its constituents is false. As we shall see in the chapters dealing with *Svārthānumāna* and *Parārthānumāna*, Dharmakīrti defines a premise in such a restrictive way that a false proposition cannot be a premises, or even a constituent of a premise, and that the premise or premises must entail their conclusion. As the premises of an *anumāna* entail their conclusion, any *anumāna* in which they do this is formally valid. As the premises have to be true, the conclusion must also be true because a set of true propositions can entail only a true proposition. A classical Indian logician, like Dharmakīrti, would call Potter's example ill-formed, or a pseudo-*anumāna*, though it is formally valid according to Aristotelian logic, not because the notion of formal validity is missing in his logical theory, not even because he attaches no importance to this notion, but because the example violates his rule about what can and what cannot be a premise in an *anumāna*.

The fact of the matter is that every inference is not an *anumāna*, but every *anumāna* is an inference, a case of saying something on the ground of having said something else. 'Inference' denotes a wider class than '*anumāna*' does, or, to put the same thing in another way, '*anumāna*' denotes a sub-class of those inferences in which a set of true propositions entails another true proposition. Inference, on the other hand, includes all those cases in which a set of propositions entails another, no matter whether the set itself is true or false. Therefore, there is nothing wrong in saying that *anumāna* is inference if we bear in mind that it is a specific kind of inference, just as we say that a syllogism is a kind of inference while admitting that every inference is not syllogistic.

Neither 'inference', nor '*anumāna*', is exclusively a technical word used in logic. Both belong to ordinary language and denote the passage in thought from something to something else. It may sometimes be correctly done, sometimes incorrectly. The logician discovers the conditions

[6]Daye, 1983, p. 233.

which make the passage correct or justified, and organizes them in a system. The Indian logician does, while the Western logician does not, include in the very concept of inference the condition that the ground, the warrant, on the basis of which something is said, must have only true propositions as its constituents. Both are dealing with or theorizing about, the same cognitive, or ratiocinative, phenomenon, but they delimit the concept of it in a more or less restrictive way. The Indian logician is more restrictive because he is willing to call only that sort of inference *anumāna* in which a set of true propositions entail another true proposition. The Western logician is less restrictive because he would call any set's entailing another proposition to be an example of inference. Both would however agree that no inference is valid, or correct, if its conclusion is false while all the premises are true.

What I mean to say is that 'inference' can perform the tasks that '*anumāna*' does, or vice versa, though philosophers, Western and Indian, have philosophized about these tasks in not exactly similar ways. I am not saying that the two words are exact synonyms, but only that 'inference' can perform, if not all, at least most of the tasks which '*anumāna*' performs and which are important from the logical point of view. Therefore, 'inference' can be used as an English equivalent of the Sanskrit '*anumāna*'. In a sense, quite frequently it is extremely difficult, if we take into account all the cognitive and non-cognitive tones and overtones of the meaning of a word, to find an exact synonym for any word even in its own language, leave alone locating one in another. This however is not an insurmountable handicap when it comes to discussing in one language a philosophical theory formulated in another language.

TWO

Knowledge and Human Ends

1. Knowledge as a Precondition for Successful Action

According to DK there are two and only two ways of knowing (*pramāṇa*) things rightly; they are perception (*pratyakṣa*) and inference (*anumāna*). There is no distinction, or difference, between a way of knowing and a result or product of knowing (*Pramāṇa Phala*). We cannot say that perception or inference is a means, and perceptual or inferential knowledge is its result. Rather, we can say that perceiving or inferring is knowing. Therefore, when we say that perceiving or inferring is a way of knowing, it would be the same as saying that perceiving or inferring is knowing, or a kind of knowing. To say therefore that there are two *pramāṇas* is also to say that there are two forms or kinds of knowledge (*samyak jñāna*).[1] *Samyak jñāna* means right or true knowledge. Sometimes I will use 'right knowledge', but even where I use only 'knowledge', I would mean right knowledge. I would, thus, use 'knowledge' even for DK's '*samyak jñāna*'. This would be in keeping with the current usage of 'knowledge' because nowadays it is considered redundant to qualify knowledge with the adjectives 'right', 'true', etc. Whenever I use 'right knowledge', 'true knowledge', etc., I shall do that only to emphasize the element of truth or veracity, as something built into the concept of knowledge, and not to mean anything different from what 'knowledge' means.

Some modern writers on Indian logic or epistemology use the word 'cognition' in a broad sense with the possibility of its being true or valid,

[1]SNS, NBT, p. 82.

or false or invalid, and 'right cognition', 'valid cognition', 'veridical cognition', etc. for what DK, and other Indian philosophers, mean by *'samyak jñāna'*. Sometimes I do so too, depending on linguistic or contextual suitability.

Being a way of knowing things rightly, inference deserves to be studied, or inquired into, as does perception. This is so, says DK, because knowing things rightly deserves to be studied or inquired into. The latter does because an individual's possession of relevant knowledge is a precondition of, or necessary for, his attainment of any end of his, any object of a human desire (*puruṣārtha*).[2] DK uses *'puruṣārtha'* to mean, as explicated in DU, any object of any desire a human being may have. An object is the object of a positive desire when an individual wants to have it, that is, to own, possess, or obtain it. It is then considered to be useful, expedient, or fit to be had (*upādeya*). An object is the object of a negative desire when an individual wants to avoid owning, possessing, or obtaining it, that is, he wants not to have it. In that case it is considered to be useless, inexpedient, or fit to be not had (*heya*). Everything, says DU, is either fit to be had or not had, *upādeya* or *heya*, and there is nothing in between the two. For everything we have either a pro-desire, that is, a desire to have it, or a con-desire, that is, a desire not to have it. What is called indifferent or ignorable (*upekṣanīya*), towards which an individual has neither a pro-desire nor a con-desire, which he neither cares to have, nor not to have, is also, according to DU, *heya*. It is *heya* because, he says, it is not the object of any pro-desire of his.[3] As knowledge is necessary for the fulfilment of a pro-desire as well as a con-desire, to obtain an *upādeya* or to shun a *heya*, and whatever an individual does he does to obtain an *upādeya* or to avoid having a *heya*, it is necessary for whatever he does.

2. Three Categories of Objects: (a) Pro-desired, (b) Con-desired, and (c) Non-desired, and Untenability of DU's Reducing (c) to (b)

We normally classify things into three types from the point of view of their possible links with our desires, that is, when viewed from the

[2]*Samyagjñānapūrvikā puruṣārthasiddhriti tad vyutpādyate.*
SNS, NB, p. 1.1.
(In this work, i.e. NB) Right knowledge is inquired into because the attainment of any object of any human desire is had only with (i.e. never without) the prior use of it.
[3]SNS, NBT, p. 22.

possibility of their being ends of human actions. I would call them pro-desired, con-desired, and non-desired. Pro-desired things are those we want to have, con-desired are those we want not to have, and non-desired those to which we are indifferent, that is, things we neither want to have, nor want not to have. For example, I may want to meet A, to avoid meeting B, and be indifferent to both meeting or not meeting C. It may then be said that I need to know where A is and where B is because only by knowing their whereabouts can I effectively or successfully attempt to meet A and to avoid meeting B. However, as I neither want to meet C, nor wish not to meet him, I do not need to know where is he. Neither meeting nor not meeting him is the object of my desire. Therefore, I need to do nothing with regard to him and consequently need no knowledge of his whereabouts. On this common-sense analysis, knowledge of any object would be required only if the object is one arousing a pro-desire or a con-desire, and not when it is an object of neither. There is nothing like an indifferent desire, or one that is neither a desire to have, nor one not to have, a thing. To be indifferent to having a thing, as well as towards not having it, is to have no desire, pro or con, in respect of it. It is this sort of a thing which we call ignorable or *upekṣaṇīya*, and which even DU calls *upekṣaṇīya*.

Towards the *upekṣaṇīya* therefore we have no desire. To have no desire towards it is not identical to having, as DU thinks, a desire not to have it. It is because he wrongly equates having *no desire* towards a thing with having a *desire* not to have it, that is, with having a con-desire towards it, that he equates, equally wrongly, the *upekṣaṇīya* with the *heya*, the non-desired with the con-desired. It is true that one has no desire, pro or con, towards the *upekṣaṇīya*, and a con-desire, that is, a desire not to have it, towards the *heya*. However, having no desire towards a thing is not the same as having a con-desire towards it. Therefore, the category of the non-desired, the *upekṣaṇīya*, cannot be merged into the category of the con-desired, the *heya*, as DU does.

The conceptual difference, or difference in category between the *upekṣaṇīya* and the *heya* is clear from the fact that when, by accident, without any effort made by him an indiviudal has to have something he considers *upekṣaṇīya*, that is, a thing he is indifferent to, he would not feel unhappy. He would however feel unhappy when, even accidentally, he has to have something he considers *heya*, that is, a thing he wants to avoid, or not to have. In the latter case, a desire of his, namely, the desire not to have it, would get frustrated, whereas in the former case, no desire of his would get frustrated (or fulfilled), as he has none.

DU's motivation for equating the *upekṣaṇīya* with the *heya* appears

to be his keenness to conclusively prove DK's claim that knowledge is a prerequisite for the successful pursuit of all *puruṣārthas*, for the fulfilment of any desire, positive or negative, that is, to successfully perform any purposive action. This he could have done even without coalescing the *upekṣaṇīya* into the *heya*. An *upekṣaṇīya* object is non-desired, an object of no desire, pro or con and, therefore, tautologically not a *puruṣārtha*. Thus, if it is shown that knowledge is required to obtain the object of every pro-desire (*upādeya*) and to abjure that of every con-desire (*heya*), that is, in order to achieve the avoidance of the *heya*, it is shown that it is required in order to obtain all *purusārthas*. This would mean the same as saying that it is required for the fulfilment of all desires, or in order to perform all purposive actions. There is no need to make the *heya* include the *upekṣaṇīya* because that is not, being non-desired, a *puruṣārtha*. By making the *heya* include the *upekṣaṇīya*, DU makes the latter also a *puruṣārtha*. Doing that is a contradiction in terms. It is self-contradictory to call the *upekṣaṇīya*, the object of no desire, the *heya*, the object of a con-desire. He does it because, it seems to me, he does not realize that *wanting not to have* something (that is, considering it *heya*) is not the same thing as not *wanting to have* it (that is, considering it *upekṣaṇīya*). The *upekṣaṇīya is* something one does not want to have, but it is *also* something one does not want not to have.

The *upekṣaṇīya* is comparable, in a normative scheme of categories, to the permissible which is neither obligatory nor forbidden. If we speak in terms of positive and negative obligations, we can say that we fulfil a positive obligation when we do the obligatory, that is, do what we ought to do, and that we fulfil a negative obligation when we forbear from doing the forbidden, that is, forbear from doing what we ought not to do. Neither in doing the permissible, nor in forbearing from doing it, we fulfil any obligation, positive or negative. Therefore, it does not matter, speaking normatively, whether or not we do it. In a similar way, as far as the fulfilment of a desire, positive or negative, that is, attainment of a *puruṣārtha*, obtaining the possession of an *upādeya* or the avoidance of a *heya*, is concerned, it does not matter whether we happen to have, or fail to have, the *upekṣaṇīya*. This is so because, by definition, the *upekṣaṇīya* is that which we neither want to have, nor want not to have, or avoid having.

As an aside from DK and DU, suppose someone says that having no desire, pro or con, towards an object, not minding having or missing it, is also to have an attitude towards it. Then it would not be a *puruṣārtha*, an *upādeya*, or, a *heya*. To be a *puruṣārtha* it must be an object of some desire, pro or con. What happens when one is advised to inculcate an

attitude of desirelessness, of indifference, towards X and he does as he is advised to do, he tries to have this *attitude towards* X and *not*, to have or not to have, X itself. Even if we call this attitude of desirelessness towards X a *puruṣārtha*, it would not mean that X is a *puruṣārtha*. Rather, it would mean that X is not a *puruṣārtha* because an attitude towards X is not the same as X. Therefore, doing that would be of no help in reducing the *upekṣaṇīya* to the *heya*. Rather, as will be shown below, it would show that the reduction cannot be achieved.

The attitude of indifference towards X, would contain no desire, pro or con, towards X. Its core would be disinterestedness towards X. If the attitude itself is to be called a *puruṣārtha*, whether *upādeya* or *heya*, it would mean that either it is the object of a pro desire of the person concerned if he wants to inculcate it if he does not already have it, or the object of a con desire if he wants to get rid of it if he already has it. He would not then be indifferent to the attitude, and the attitude would not for him be *upekṣaṇīya* but *upādeya* or *heya*. This detour of making the attitude of indifference itself a *puruṣārtha* does not, therefore, enable us to deny the existence of the *upekṣaṇīya* as a separate category from the categories of the *upādeya* and the *heya*. Rather, it shows that the *upekṣaṇīya* cannot be reduced to the *heya*, as DU tries to do. Indeed, it establishes that there must be an X towards which it is right for an individual to have no desire, pro or con, that is, an *upekṣaṇīya* X in order that he may be advised to have for himself as a *puruṣārtha* (an object of desire) the adoption of an attitude of disinterestedness or indifference towards it. This is the point I want to make: DK's assertion about the indispensability of knowledge (*samyak jñāna*) for the attainment of all *puruṣārthas* (*sarva-puruṣārtha*) can very well be maintained without reducing the category of the *upekṣaṇīya* to that of the *heya* and that even otherwise it is logically unfair to make this reduction.

3. False Belief and Action: Self-deception

It may seem that a false belief is also sometimes instrumental in the attainment of a *puruṣārtha* (*puruṣārtha siddhi*). Suppose I believe that a railway train T arrives on the platform P at 5 p.m. when its scheduled time of arrival is 5 a.m. In accordance with my (erroneous) belief I reach the railway station at 5 p.m., find T on P and occupy a comfortable seat in it. When the train moves, my neighbour narrates his terrible experience of having had to wait at the platform from 5 a.m. which, as he informs me, is the correct time of its arrival. I now realize the falsity of my belief, but thank the false belief for having saved me from the ordeal of a long

wait. It has apparently helped me to achieve my objective of boarding the train comfortably.

A false belief might sometimes not only help an indiviudal to achieve an objective, but may also make him so self-complacent and uncritical of himself that he might develop unwillingness, or lack of courage, to question it. The false belief that his wife is absolutely faithful to him, when she is not, may help A to have a happy home and the discovery of the truth may throw his life into utter turmoil. Alternatively, he might not feel any need to know the truth or, of course, not dare to know it.

Neither DK nor DU seems to have taken any notice of such possibilities, and definitely not of the subtler, unconscious, uses of false beliefs in what is called self-deception, in protecting oneself from some emotional setback, conflict, etc. DK does not however have to deny such uses of false beliefs to hold his theory of right knowledge as a precondition for the attainment of all *puruṣārtha*s. It can be argued from his point of view that false beliefs are used by a person unconsciously, or unknowingly, to provide him with some protective cover. The pursuit of a *puruṣārtha*, as well as the use of relevant knowledge to aid it, on the other hand, is a conscious, purposive, planned, process in which one cannot use a false belief while knowing that it is false. It can be said, therefore, that an act of self-deception cannot be called a counter-instance to DK's assertion of the necessity of right knowledge for the attainment of any *puruṣārtha*.

4. Essential Instrumentality of Knowledge and its Implication

For DK, therefore, the value of right knowledge (*samyak Jñāna*) consists in the fact that the realization of all that we aim at (*sakala puruṣārthasiddhi*) is accompanied with it in the sense that, without the former, no *puruṣārtha* can be attained. This feature of right knowledge, that is, its instrumentality, he says, is a good justification for inquiring into its nature, sources, etc., that is, in order to conduct an epistemic, logical, inquiry. The fact that DK and DU make only this feature of knowledge, and no other, the subject of a philosophical study conveys the impression that knowledge, for them, has only instrumental and no intrinsic value; that it is not to be acquired, or inquired into, simply because of its being what it in itself is but only for its utility. This view would imply that an indiviudal who has no *puruṣārtha* has no need to have any knowledge. It may be said that such a person does not exist, but it cannot be said that his existence is an impossibility. In the event that he does exist he may say that he

needs no knowledge. Secondly, he, who has attained all his *puruṣārthas*, may equally say that he now needs no knowledge. This possibility cannot be countered by holding *a priori* that it is impossible for anybody to have no *puruṣārtha* or having attained all his *puruṣārthas*.

How many, or which, of his *puruṣārthas* an individual attains depends on his capabilities, the nature of his *puruṣārthas*, the nature of his world, etc., and therefore can be ascertained only empirically, and not on an *a priori* basis. Moreover, it is empirically possible that an individual has very few *puruṣārthas* all of which are attainable and have been attained by him. Apart from the *Cārvāka*, all the classical Indian schools of philosophy hold that an individual should control his desires, which means that he should have a limited number of *puruṣārthas*. They also maintain that an individual ought to attain all four types of *puruṣārthas*: *artha* (material goods necessary for a worthwhile existence in the world); *kāma* (satisfaction of desires worth satisfying); *dharma* (adherence to the moral code), and *mokṣa* (liberation or spiritual self-fulfilment). As 'ought' implies 'can', they must, and I think they do, also, maintain that an individual *can* attain all his *purusārthas* which are worth attaining. Only by maintaining that is worthwhile can, they say, that an individual ought to, or even ought to try to, attain all his *purusārthas*.

To convince a person of either one of the two kinds—he who has no *puruṣārtha* as well as he who has attained all his *puruṣārthas*—that he ought to attain all, or at least one or more of his *puruṣārthas*, and therefore ought to attain right knowledge which is a necessary condition for attaining a *puruṣārtha*, DK or DU would have no arguments to offer.

It may be argued that this is not a serious blemish in DK's theory because he may very well attribute to knowledge both instrumental and intrinsic values. Supposing he does, in that case knowledge would be cherishable, or worth acquiring, or inquiring into, even if it were of no use in *puruṣārthasiddhi*. However, DU interprets DK as maintaining that the instrumentality of knowledge in the attainment of all *puruṣārthas* (*sarvapuruṣārthasiddhi*) is the only or primary reason for acquiring it, or for inquiring into its nature and ways of attaining it.[4] This claim about knowledge made by DK, or DU, would lose a lot of its force if at any time knowledge is worth having, or inquiring into, without being required for some *puruṣārthasiddhi*. It seems to me that DK would not consider knowledge as having intrinsic value. Further, one may assert that all other classical Indian philosophers, except the Advaitin, would likewise deny to knowledge intrinsic value. For all non-Advaitins, even

[4]Ibid., p. 4.

knowledge of ultimate reality, which is the highest kind of knowledge, has only instrumental value in so far as it is to be sought because, and only because, it is a means to attaining salvation (*mokṣa*). Only for the Advaitin, knowledge of ultimate reality is not a means to, but identical with, salvation.

Moreover, there may be raised another logical problem with DK's or DU's conception of knowledge: If knowledge is a necessary condition for the attainment of every *puruṣārtha*, then in itself it cannot be called a *puruṣārtha*, instrumental or intrinsic. Calling it a *puruṣārtha* would lead to an infinite regress as shown below:

(A) (1a) To attain a *puruṣārtha* P we ought to have knowledge (*samyak jñāna*) of P.

(2a) Therefore, if knowledge itself is a *puruṣārtha*, in order to attain knowledge we ought to have knowledge of knowledge.

(3a) This would mean that then knowledge of knowledge would be another *puruṣārtha*.

(4a) Therefore, we ought to have knowledge of knowledge of knowledge in order to attain the *puruṣārtha* of knowledge of knowledge, and so on *ad infinitum*.

Looking at DK's conception of the relation between knowledge and *puruṣārthas*, in a slightly different but related way, we may derive another set of paradoxical consequences which DK, or any Buddhist thinker, cannot ignore, or be complacent about. Proceeding from the side of knowledge, we can get the following:

(B) 1 (b) If one does not already know what P is, he would not aim at it, that is, he would not make it a *puruṣārtha* of his (as one cannot desire to have, or not to have, P if he does not know what P is).

2 (b) If he would not make P a *puruṣārtha*, he would not seek to know P (knowing which he would have needed to attain it as a precondition of attaining it had it been his *puruṣārtha*).

3 (b) If he would not seek to know P, he would not know P.

4 (b) Therefore, if one does not already know what P is, he would not know what P is. (This means that one would not know more than what he already knows, that his zone of knowledge is strictly limited to what he already knows, that is, he cannot expand it.)

Proceeding from the side of a *puruṣārtha*, in a similar way, we reach an equally unpalatable conclusion:

(C) (1c) If P is not already one's *puruṣārtha*, one would not seek to know it (as he would have sought to know it had it been his *puruṣārtha* because without knowing what it is he would not have been able to get it).

(2c) If he would not seek to know P, he would not know P.

(3c) If he would not know P, he would not make it a *puruṣārtha* (because one cannot desire to have, or not to have, P without knowing what P is).

(4c) Therefore, if P is not already one's *puruṣārtha*, he would not make it a *puruṣārtha* of his. (This means that one would not make anything a *puruṣārtha* if it is not already a *puruṣārtha* of his, that he would not have any new *puruṣārtha*, that is, his zone of *puruṣārtha*s is strictly limited to what he already has.)

All of the three unpalatable, or annoying conclusions, (4 a), (4 b) and (4 c), it seems to me, can be avoided by making a distinction between ordinary, working, or common-sense, knowledge and comprehensive, right, knowledge, that is, *samyak jñāna*, and using it in the following way:

Every normal person has an ordinary, working, common-sense, knowledge of things around him, as a result of his normal, not necessarily philosophical, schooling, formal or informal, in course of his living a normal life in his social and physical surrounding. It is this common-sense knowledge of P, which one naturally has, whether P is knowledge itself, or something else, and which alone one needs to make P a *puruṣārtha*. To *start* the process of holding something to be a *puruṣārtha* and even to *begin* the process of trying to have it, common-sense knowledge is all that he needs and that he has. He requires right knowledge, *samyak jñāna* to ascertain whether P is really worth pursuing and to make the pursuit successful. For example, his common-sense understanding of what is right knowledge is enough to motivate him to ascertain what right knowledge is. Therefore, to make *samyak jñāna* itself a *puruṣārtha* he would not need to have *samyak jñāna* of *samyak jñāna*, etc. and consequently would not be caught up in the sort of infinite regress which (A) has indicated. To make anything a *puruṣārtha* he would need, if the suggestion made here is introduced in DK's theory, only a common-sense knowledge of what it is. It is to successfully attain it for which he would need its *samyak jñāna*. His zone of knowledge is not, thus, strictly limited to what he

already knows because the possibility of transforming his common-sense knowledge, which he already has, into *samyak jñāna*, or of replacing the former by the latter, is always there.

In a similar way, on the basis of his common-sense knowledge of what any P is, he may make it a *puruṣārtha* and then acquire its *samyak jñāna*. After acquiring its *samyak jñāna* he may conclude that it is not really worth having and therefore give up its pursuit. Or, he may conclude that it is and continue its pursuit. It may also happen that he discovers that not P, but something related to it, or opposed to it, is really worth pursuing, and then may replace P by the newly-discovered *puruṣārtha* and start pursuing it. This means that his zone of *puruṣārthas* is also not strictly limited to those which he already has, or aims at.

Buddhism being a philosophy much closer to common sense than some other Indian philosophies are, I think DK, or DU, would have no difficulty in adopting the device suggested above to avoid the paradoxical conclusions of A, B, and C. It also seems to me that they can do that without being self-inconsistent, that is, without being required to drop, or modify, any of their epistemological or logical doctrines.

While explaining the role of knowledge in *puruṣārthasiddhi*, DU says that knowledge is only a *jñāpaka*, that is, cognition-producing or information-supplying cause, and not a *kāraka*, that is, effectuating or object-yielding, cause. To know the nature and other details of an object of desire (*puruṣārtha*) is only to know what it is, where it is, how it can be obtained, etc. All this knowledge is necessary for being successful in acquiring it. But having the knowledge is not the same as having the object. Knowing or cognising the object does not bring the object known within the seeker's reach.[5] For the Advaitin, on the other hand, knowledge of reality is effectuating, or object-yielding (*kāraka*). To know the reality, that is, to *know* that one is Brahman, is to be Brahman which he really is. When the knowledge of Brahman or Self is said to destroy ignorance (*avidyā* or *māyā*), it is not a means to the destruction of ignorance, conceivable as separate from the latter. Rather, it is identical with the latter. It is true that, for the Advaitin, empirical, worldly knowledge (*vyāvahārika jñāna*) is only a *jñāpaka kārana* (cognition-yielding cause); only knowledge of ultimate reality (*pāramārthika jñāna*) is a *kāraka kāraṇa* (object-yielding cause). But for all others even the latter is a *jñāpaka kāraṇa*. To know the nature of suffering or the truth that there is suffering in the world, is not, for the Buddhist, to be freed from suffering. But, for the Advaitin, *to know*

[5]Ibid., pp. 10–11.

the nature of *ānanda* (bliss) is *to be ānanda* (bliss). This does not appear to be an odd statement, when we consider that when the Advaitin says that the Brahman, or the Self, is existence-consciousness-bliss, he does not mean that Brahman is a trinity, a compound consisting of three things, existence, consciousness and bliss. He rather holds that it is a pure unity which can be denoted by the term 'existence-consciousness-bliss', or even by any one of the three: We can say that it is existence-consciousness-bliss, or simply that it is existence, or consciousness, or bliss, because from the analysis of any one of the three, the other two can be obtained.

5. Criteria of Knowledge: Concordance with Experience and Newness, making Knowledge Essentially Empirical

It may be noted that for DK and other Buddhist philosophers, inference, as well as perception, gives knowledge only of things belonging to the phenomenal world, the empirical world in which we live, move and have our being, with which we are concerned in our day-to-day transactions. It is the world of objects, properties and relations. Neither inference nor perception gives us knowledge of the noumenal, ultimate, realities which are momentary occurrences, or events, and not stable objects having any duration. But we are indispensably concerned with the phenomenal world because to live is to live in interaction with it. It is in it that we try to attain, and do attain at least some of the objects of our desires, our *puruṣārtha*s. To understand the role of inference and of perception as givers of right knowledge of the phenomenal world is very important because they and they alone can make available to us the knowledge necessary for the attainment of what we aim at, that is, of our *puruṣārtha*s. We must, therefore, be clear about the nature of right knowledge, that is, about its criteria, the property or properties which it must have in order to be called right knowledge, or knowledge.

According to DU's interpretation of DK, a cognition, to be knowledge (that is, right knowledge, or *samyak jñāna*), must have two features or characteristics: (a) it must be uncontradicted by experience (*avisamvādī*) and (b) its object must be one which has not yet, that is, prior to having this cognition, been known to the cognizer.[6] Knowledge is a means to the attainment or avoidance of its object. It can be an effective means

[6]*Avisamvādakam jñānam samyak jñānam*. SNS, NBT, p. 10.
Right knowledge is cognition uncontradicted by experience.
Anadhigata viṣayam pramāṇam. Ibid., p. 11.
Only that cognition is right knowledge the object of which had not been cognized prior to it.

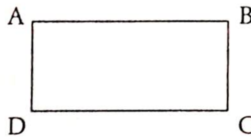
only if the object which it makes known is found to be the same as the object the cognizer actually meets with in his experience of, or encounter with it, when he approaches this to act on it, or with regard to it, as per his desire about it. Secondly, only the first cognition of an object motivates the cognizer to move towards the object cognized. Knowing the already known is not really knowing anything. A knowledge-giving sentence must therefore be synthetic, or informative. The logical link between the two features of knowledge is very clear. Only about a cognition which is *avisamvādī*, that is, one the object of which is the same as the object encountered in experience, we can ask whether its object was or was not, known earlier. *Avisamvādī* (empirically contradicted or falsified) cognition does not yield any knowledge because the object cognized in it is not what is actually, or empirically, encountered with. Therefore, the question does not arise whether or not it is the cognition of a new, or of an already known, object. It gives cognition of no (real) object, or rather, no knowledge at all. At the most, it can be called cognition in a broad sense, but not in the sense of right knowledge.

A logical corollary of the above view is that the second perception of an object perceived earlier is not a *pramāṇa*, nor is the inference of what has already been perceived, or inferred in an earlier act of inference. For example, the first cognition, namely, the inference of fire in the mountain when validly drawn would be a *pramāṇa*. But the subsequent perception of the same fire would not be, even though no error has been committed in the perceptual process. According to Buddhist epistemology, the division of labour between the two *pramānas*, perception and inference, is complete: Anyone of the two cannot operate on what the other has operated; the same object cannot be the object of more than one *pramāṇa*. This view, which the Buddhists hold, is called *pramāṇavyavasthā* (objective exclusivity among the sources of knowledge). The view contrary to it, according to which more than one *pramāṇa* can operate on the same object, is called *pramāṇa-samplava* (objective inclusivity among the sources of knowledge), and is held by the *Nyāya* school.

The second corollary of DU's characterization of knowledge is that only empirical knowledge can be called knowledge proper, or right knowledge, because only empirical knowledge can be required to be uncontradicted by experience, or to give some new information about the object it makes known to the cognizer. In linking knowledge with the attainment of the objects of our desires (*puruṣārthasiddhi*) too, DK and DU seem to imply that right knowledge is empirical knowledge because only empirical knowledge, that is, knowledge of things or facts as they actually are, according to them, can enable the knower to attain, or to desist from attaining, the object known, which may be the object

of a pro, or a con desire. DU says[7] that the agent of a purposive action seeks the knowledge of the object which can enable him to fulfil a particular purpose or desire, or a particular set of purposes or desires, of his. That is why right knowledge is the cognition of the object cognized in, or by which has the causal efficiency or competence (*artha-kriyā-kāritva*) of yielding the kind of effect which the agent or the cognizer believes, expects, or wants, it to yield. That is, the object known in a right cognition is capable of being used by the knower to fulfil the concerned purpose or desire of his.

It is obvious now that DK and DU have in their mind only empirical knowledge when they speak of *samyak jñāna* as a necessary condition of the attainment of any object of desire (*puruṣārtha siddhi*). It is worth mentioning, however, that even non-empirical knowledge can also render some help to, or even be a necessary condition of, *puruṣārtha siddhi* in some cases. If it were not the case, logic and mathematics would have had very little practical utility. To illustrate what I mean, let us suppose that a young disciple S is standing at the corner B of the rectangular plot ABCD, his guru (teacher) G at the corner D, the point diametrically



opposite of B, and S wants to reach G in the shortest possible time. This means that he must know the shortest possible route from B to D because only by traversing the shortest possible route he can reach G in the shortest possible time. One way to possess this knowledge would be to equip himself with the geometrical truth that the diagonal of a rectangle is the shortest distance between the points (D, B) it connects. This is a logical, or conceptual, truth, and certainly not an empirical one about which empirical confirmation is necessary. Neither does DK, nor DU, mention the utility of logical, conceptual, knowledge for attaining any *puruṣārtha*. But they could have admitted it without relinquishing their claim about the necessity of empirical knowledge for *puruṣārtha siddhi*. There would have arisen no self-inconstancy in their system because of their admitting that both, empirical and conceptual or logical knowledge,

[7]*Arthakriyārthibhiścārthakriyāsamartha—vastuprāptinimittam jñānam mrigyte. ... Tatoarthakriyāsamarthavastupradarsakam samyagjñānam.* Ibid., p. 16.

For obtaining the object capable of fulfilling a purpose of his, its knowledge is sought by the person desirous of getting the purpose fulfilled.

Therefore, only that sort of knowledge, which is a knowledge of the object capable of getting the purpose fulfilled, is right knowledge.

were necessary for the latter, nor because of their adding that the criteria of the validity of the two kinds of knowledge were different. This move would have added a new dimension to Buddhist logic or epistemology by motivating Buddhist philosophers to ascertain the nature of logical, mathematical, that is, non-empirical, truths.

6. Probative Equality of Inference and Perception, and its Adverse Implication for Inference

Inference, being a *pramāṇa*, therefore is itself, or yields, knowledge uncontradicted by experience and of objects not already known. This is equally true of perception, as both are of equal strength or competence (*tulyabala*). The reason for an inquiry into the nature of inference, like that of perception, is its role as a giver of knowledge (*samyak jñāna*). This means that an alleged act of inference which does not yield knowledge uncontradicted by experience (*avisamvādaka*), or the object of which is not until then unknown (*anadhigata*), is not genuine inference, or inference (*samyak anumāna*).

Perception of an object is a valid, direct, (*sākṣātkārī*) cognition of it, unmediated by, or independent of, any other kind of cognition. But inference is a valid, indirect, cognition of the object inferred since it is mediated by, or dependent on, another cognition, namely the cognition of another object called *linga, hetu,* or *sādhana* (sign, logical reason, or just reason, logical mark) with which the *sādhya* (inferred object) is invariably, unexceptionally, universally, related. But as far as their epistemic or probative status is concerned, inference and perception are of equal importance. That is why, says DU, DK puts the conjunctive 'and' ('*ca*') between 'perception and inference' in stating that they are the two kinds of *samyak jñāna*.[8] DU refers to the logical truth that each conjunct of a conjunctive statement is as important as the other. Therefore, by placing 'perception' as the first conjunct and 'inference' as the second, DK does not imply that perception is in any way superior to inference. Just as there cannot be any (veridical) perception without the object perceived being actually there, there cannot be any (valid) inference without the object inferred being actually there. That is why each one of the two is as

[8]*Dvividhamsamyak jñānam*. SNS, NB, p. 26.2.
Right knowledge is of two kinds.
Pratyakṣam anumānam ca iti. Ibid., p. 28.3.
(They are) perception and inference only.
[9]*Cakārah pratyakṣānumānayostulyabalatvam samuccinoti. Yathā arthabinābhāvitvād artha*

effective a means to the attainment of the object cognized as is the other.[9]

A short comment on DK's and DU's treatment of the two kinds of knowledge, perceptual and inferential, as carrying equal strength, is called for here. Any piece of cognition has two end-points, the object cognized and the subject or person who cognizes it. The reason for making the above claim, given by DU and which has already been mentioned, derives from the alleged nature of the object cognized in the two types of knowledge: The object cognized in each one of the two, he says, is equally *artharkriyā samartha*, that is, capable of satisfying the expectations aroused in the cognizer by its cognition. DU does not adequately take into account the other end-point of knowledge, namely, the subject or cognizer, more specifically the kind of logical attitude each one of the two cognitions authorizes the cognizer to take towards the object cognized by him by means of it. The question which particularly arises in this regard is that of the authority given to the cognizer by his cognition to attribute certitude to the truth of the product of his cognition: Is the cognizer justified in attaching the same kind of certitude to the truth of the judgement, the end-product, arrived at as the result of perception and to that arrived at as that of inference? For example, does the inference of the judgement, 'There is fire on that hill', drawn by him from the conjunctive premise, 'There is smoke on that hill and wherever there is smoke, there is fire', authorize him to attribute to the truth of his conclusion the same degree of certitude which his perception of fire on the hill authorizes him to attribute to that of the perceptual judgement, 'There is fire on the hill'?

After his perceiving fire on the hill in a manner in which perception ought to be done, one cannot doubt the existence of fire on the hill. If he sees fire on the hill, there is fire on the hill. Therefore, we would say, and so would DK and DU, that his perception gives him the full epistemic or logical authority to attribute truth with complete certitude to his perceptual judgement, 'There is fire on the hill'. DK and DU would say that when he infers, 'There is fire on that hill' in the way he ought to have inferred, that is, from the premise, 'There is smoke on that hill and wherever there is smoke, there is fire', his inference gives him the full

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prāpayat pratyakṣam pramāṇam, tadvad arthabinābhāvitvād
anumānamapi paricchinnamartha prāpayat
pramāṇam iti. SNS, NB. Ibid., p. 31.

The word 'and', conjoining 'perception' and 'inference' (in the sentence 'Perception and inference') signifies the equal status of perception and inference (as givers of knowledge). Just as perception, by not taking place without the object of perception being there, helps the attainment of the object perceived and is therefore a giver of right knowledge (*pramāṇa*), so is inference a giver of right knowledge because it too, because of not taking place without the object inferred being there, helps the attainment of the object inferred.

epistemic or logical authority to attribute truth with complete certitude to his inferential judgement, 'There is fire on the hill'. Therefore, the perceptual and inferential judgements are true with the same degree of certitude, and perception and inference are of equal strength (*tulyabala*).

But the truth of the inferential judgement can be asserted with complete certitude only if, (a) the premise is true, *and* (b) the premise entails the conclusion, the inferential judgement in question; that is, only if the inference is deductive. But this would mean that the inferred judgement does not say anything new, anything not already said by the premise. One proposition, or judgement, can entail another proposition, or judgement only if the assertum of the latter is already involved in its assertum, in what it asserts, may be implicitly. The object cognized in such an inference, for example, presence of fire on the hill, would then be *adhigata* (already known) and not *anadhigata* (unknown). But when this is the case, inferential cognition cannot be called right knowledge (*samyak jñāna*) because, on DK's and DU's definition of right knowledge, one of the two criteria of right knowledge is that it must be a cognition of an object not already known.

The conclusion of an inductive inference can assert something not asserted by its premise or premises. But the possibility of its being false, that is, contradicted by experience, can be ruled out. Therefore, its epistemic or logical strength would not be equal to that of perception. For the same reason, it cannot be called right knowledge because it lacks the other criterion, as per DK's and DU's definition of right knowledge, namely, the criterion of being uncontradicted by experience (*avisamvādakatva*). The inductive inference, 'There is a hermit living on that hill', from 'That hill has a lot of greenery like a large number of hills on which hermits live', says something not entailed by its premise. But there is no certainty of its being true, that is, of its not being contradicted by experience. The conclusion is, in fact, a probabilistic sentence equivalent to, 'It is highly probable that there is a hermit living on that hill'. Such a sentence neither DK nor DU would accept as communicative of right knowledge. The upshot of all this is that neither deductive, nor inductive inference can be said to have epistemic or logical strength equal to that of perception because the former is not a giver of any new knowledge (*anadhigatārthabodhaka*) and the latter is not a giver of any knowledge which cannot be contradicted by experience (*avisamvādī*). Therefore, it is not completely trouble-free to treat perception and inference as having equal strength (*tulyabala*) while requiring that a cognition must satisfy the two criteria of right knowledge as laid down by DK and as explicated by DU.

THREE

Division of Inference (Anumāna) *into Inference for Oneself* (Svārthānumāna) *and Inference for Someone Else* (Parārthānumāna)

1. DK's Method

Quite a few classical Indian logicians first define inference and then discuss its kinds. For example, Annambhaṭṭa first defines inference as the means of attaining inferential knowledge (*anumiti*) and expands this definition by further defining inferential knowledge and other related concepts. Inferential knowledge is, he says, generated by *parāmarṣa*, and *parāmarṣa* is the knowledge that the object (say, P), of which a particular thing (say, S), is inferred to be true, has that (say, H) which has the relation of invariable concomitance with the inferred thing (S).[1] That is, P is inferred to have S on the ground that P has H and that anything which has H also has S.

But DK proceeds in a different way. He begins with the statement that inference (*anumāna*) is of two kinds and calls them, as others do, *svārthānumāna* (SA), inference for oneself, and *parārthānumāna* (PA), inference for someone else.[2] He then discusses the nature and varieties

[1]Annambhaṭṭa, *Tarkasangraha* in Chandrodaya Bhattacharya's *The Elements of Indian Logic and Epistemology* (Calcutta, 1966), p. 58. The latter contains a portion of the text and of the commentary on it, entitled *Dīpikā* written by Annambhaṭṭa himself, and an English translation of both.

The same procedure of first defining inference (*anumāna*) and thereupon discussing its kinds is followed by Keśava Miśra in his *Tarkabhāṣā* (Motilal Banarasidass, Hindi translation by Badari Nath Shukla, 1976), pp. 97–107.

[2]SNS NB, pp. 96–98.

of each one of them. Anticipating from an opponent the query why he begins with its kinds when he is expected to give a general definition of *anumāna*, DU says that its two kinds are so different from each other that there is nothing common between them. A general definition of *anumāna*, equally true of all of its kinds, must state the property, or the set of properties, present in all of them. Since there does not exist any such property, it is not possible to give a general definition of *anumāna*. The only course open to the master, therefore, in order to explain the nature of *anumāna*, is to explain individually the nature of each of its two kinds. To explain the nature of each one of them is to explain what *anumāna* is.[3]

There is nothing palpably wrong with DK's procedure. When the nature of both SA and PA is explained, and there is no third kind or type of *anumāna*, the nature of *anumāna* is explained. And, if the two are absolutely different from each other, there is no other way, as DU says, to explain what *anumāna* as such is. But it seems to me that the two are not absolutely different. I am not suggesting that if they are not, DK's procedure of explaining the nature of *anumāna* would be wrong; it may still be right. But then DU's way of justifying DK's procedure would not hold good. I say that DK's procedure may still be right, or a more down-to-earth method of explaining how *anumāna* in fact works, than the method of first giving a general definition of it and thereafter explaining the nature of its different kinds or forms, as Annambhaṭṭa and some other Indian logicians do. What is more important here is DU's or DK's substantive claim that SA and PA are absolutely different from each other. It will be examined in this chapter in the course of discussing the viability of the division of *anumāna* into SA and PA. I hope the discussion would show that the claim is not as unquestionable as DU thinks it is, and therefore, that the division into SA and PA is not as viable as the classical Indian logical, or epistemological, tradition, or its modern interpreters, take it to be.

2. Division of Inference into SA and PA as Untenable

SA is said to be, as explicated by DU, the kind of inference in which the inferer draws a conclusion from a set of premises for his own knowledge

[3]*Parārthānumānam śabdātmakam, svārthānumānam tu jñānātmakam. Tayoratyantabhedāt naikam lakṣanamasti. Tatastayoh pratiniyatam lakṣanam ākhyātum prakāra-bhedah kathyate.* SNS, NBT, p. 97.

Inference for someone else is linguistic (or verbalized), inference for oneself is knowledge-yielding (or epistemic). The two being absolutely different from each other, there does not exist any characteristic common to both of them. Therefore, to indicate the

and PA the other kind in which he demonstrates to another person that a certain conclusion follows from a set of premises in order to generate in the latter the knowledge of the truth of the conclusion so demonstrated.[4] SA is thus an internal, cognitive, process of reasoning conducted by the inferer in the privacy of his mind. It is knowledge-giving (*jñānātmaka*) to him because it gives to him the knowledge of the inferred truth. PA, on the other hand, is a public exercise because it is the demonstration of the truth of a proposition by the demonstrator to another person. The latter, that is, the demonstratee, in PA must be someone different from the demonstrator. The demonstrative exercise, which any PA is, can only be achieved by the demonstrator by doing the demonstration in the public language shared by him and the demonstratee. Therefore, it is propositional or linguistic (*śabdātmaka*).

As an example of one of the varieties of SA, DK gives,

(1) Here is fire
Because here is smoke

DU's explication of (1) is that this inference is an application of the common-sense view of the effect–cause relation according to which where there is an effect, there is its cause, and where there is no effective (*samartha*) cause, there is no effect.[5]

As an example of one of the varieties of PA, he gives,

(2) Wherever there is smoke, there is fire, for example, in a kitchen and wherever there is no fire, there is no smoke, for example, in a pond, and here is smoke.

In (2) the conclusion, 'Therefore, here is fire' is left unstated since it is obvious, as it is entailed by the conjunctive statement 'Wherever there ... smoke'. The latter is nothing but the conjunction of all the premises

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distinctive nature of each one of them, the (two) kinds of inference have been mentioned (and separately discussed).

[4]*Svasmāyidam svārtham. Yena svayam pratipadyate tat svārtham. Parasmāyidam Parārtham. Yena param pratipādayati tat parārtham.*

SNS, NBT, p. 98.

Inference (drawn) for one's own cognition is inference (drawn) for oneself. That (inference) by which one oneself obtains knowledge is (inference drawn) for oneself. Inference (drawn) for someone else's cognition is inference (drawn) for someone else. That (inference) by which one conveys (some) knowledge to someone else is inference (drawn) for someone else.

[5]SNS, NB, NBT, p. 126.

required to yield the conclusion. Similarly, in (1) the universal premise 'Wherever there is smoke, there is fire ...' is left unmentioned though it is equally needed in SA and PA to legitimize the inference of the conclusion. Since the inferer draws the conclusion for his own cognitive benefit, he does not need to state to himself the universal premise which he is definitely cognizant of and makes use of. But in PA he has to state it to the demonstratee, who is another person, because without it he cannot demonstrate that the conjunction of his premises entails the conclusion the truth of which he aims at demonstrating.

In both (1) and (2), fire is the object inferred, or to be inferred (*anumeya*, or *sādhya*), smoke is the logical mark or reason (*hetu*), and the place or object denoted by 'here' the thing of which fire is inferred to be true. The latter is called *pakṣa*, the locus of the logical reason, and it is the *pakṣa* which, in the conclusion is asserted to have the *sādhya* or *anumeya*, that is, to be the locus of the latter too. This transition from the *pakṣa*'s having the logical reason (*hetu*), smoke, to its having the inferred object (*sādhya*), fire, is made on the ground that where there is smoke, the *hetu*, there invariably is fire, the *sādhya*, that is, on the ground of a relation of invariable concomitance between the *hetu* and *sādhya*. The universal proposition stating this invariable concomitance is called *vyāpti*. It can be stated positively as 'Wherever there is smoke, there is fire, as in a kitchen', and negatively as 'Wherever there is no fire, there is no smoke, as in a pond'. The positive and negative versions are logically equivalent because the negative version is the transpositive of the positive version as per the rule of transposition, '$(P \supset Q) \equiv (\sim Q \supset \sim P)$'. In both the positive and negative versions of the *vyāpti*, there is present a clause mentioning an example. This part is called *udāharaṇa* or *dṛṣṭānta* (example). Its function is to exemplify the universal proposition of which it is an adjunct. It shows that the universal proposition has existential instantian, that its subject term does not denote an empty class, that there exists an example of an object, say, a kitchen, which has fire when it has smoke, and of an object, say, a pond, which does not have smoke when it does not have fire. Sometimes the entire universal sentence, including the illustrative part, is also called *udāharaṇa*. But I shall refrain from doing that, though I shall call the entire universal sentence, including the illustrative part, *vyāpti*. I shall use '*udāharana*' to refer only to the illustrative part, and discuss, a little later, its logical role in some detail.

The sentence or proposition in which the *pakṣa* is said to have the *hetu*, I will call *pakṣa vākya* (PV) and that in which the *sādhya* is said to be true of, possessed by, or predicated of, the *pakṣa*, *nigamana* (conclusion).

The complete conjunction of the *vyāpti* and the *pakṣa vākya*, the complete set of the premises, I will call the *hetu vākya* (HV) because it is a complete statement of, as we will soon see, the three features of the *hetu*.

As this point I would only reassert that for DK, and all other Indian logicians, in both SA and PA, that is, in every inference the *pakṣa vākya* and the *vyāpti* are necessary to yield the conclusion. Further, to be elaborated later on, the presence of the *hetu* (for example, smoke) must be cognized in the *pakṣa* (for example, a particular place), and the *vyāpti* must state the relation of universal concomitance, both positive and negative, between the *hetu* and the *sādhya*. The *hetu* (or *linga*) has, DK says three features: (a) it is necessarily present in the *pakṣa*, (2) it is present only in things similar to the *pakṣa*, and (3) it is always absent in things dissimilar to the *pakṣa*. Since it has these three features, it is called *trirūpa linga* (three-featured, or three-faceted, logical mark of the *sādhya*). Its three features guarantee that there is a relation of universal concomitance between it and the *sādhya*. All these things will be discussed in detail later. But let us always keep in mind that the *vyāpti* is indispensable for SA as well as PA. It may not be mentioned, but only assumed in SA and explicitly mentioned in PA, but it is equally used in both and functions alike in both.

The classical Indian logician's way of putting all possible inferences into the two groups, SA and PA, has been hailed by almost all modern writers on classical Indian logic as a very purposeful and neat logical division. None of the well-known historians of Indian philosophy, nor any of the early, or recent, modern writers on Indian logic, seem to have felt the need for examining the very principle on which the division is based. Therefore, the deficiency, or lack of clarity, if any, concealed in it, is likely to have remained unscrutinized, or unnoticed. In the course of discussing DK's statement on the division and DU's elaboration of it, the critical observations made here would apply not only to DK's statement on it but to the division as such, that is, to its characterization by anyone, Buddhist and non-Buddhist alike. This is so because its characterization by all who accept this division runs on similar lines. The objective of these observations is to ascertain whether or not it is as illuminating a logical way of dividing inferences as it has been taken to be.

2. (a) Knowledge-yielding SA and Language-involving PA: A False Duality

DU's explication of the difference between SA and PA by saying that SA is knowledge-yielding (*jñānātmakam*) and PA is linguistic (*śabdātmakam*)

may suggest that SA is non-linguistic, or pre-linguistic, in the sense that it does not involve the use of any language. But that cannot be true. No inferring can be done without the use of language. No matter for whose cognition it is done and howsoever elementary it may be, it involves consciously, intentionally, passing from some thought, some item of information, to some other, and this cannot be done without giving a linguistic form to each one of the necessary steps involved in the passage from one step to another. As has been said, DK admits, as others do, that SA too necessarily involves the use of a *hetu vākya* asserting the presence of the *hetu* in the locus (*pakṣa*), only in the similar to the locus (*sapakṣa*) and never in the dissimilar to the locus (*vipaksa*). This is clear from his explicitly saying that SA is the knowledge yielded by the three-featured logical mark.[6]

It is the cognition, or sub-vocal assertion, of the presence of the *hetu* in the *pakṣa*, and the recollected awareness of the universal concomitance between the *hetu* and the *sādhya* which, when synthetically comprehended, or taken together, yield in SA the conclusion, the cognition, that the *pakṣa* has the *sādhya*. In SA, the whole process, the entire drama, may be silently, or sub-vocally enacted, but certainly not without involving any use of any language. All the steps need not be stated, or uttered, but that would not make it non-linguistic. And, if out of glee in arriving at a pleasant conclusion, the inferer blurts out 'Here is fire', this use of language, this vocalization, would not make his inference cease to be a case of SA if it has been drawn by him for his own cognition.

2. (b) Inference and Intention

Since SA means inference drawn for oneself, and PA inference drawn for someone else, it is sometimes held that what distinguishes one from the other is the inferer's intention. In the former, his intention is to draw the inference for his own information, or knowledge, and in the latter to demonstrate it to another person for his information or knowledge. Such intentions may be there, but they do not play any logical role. They have nothing to do with the conditions of validity, soundness, or unsoundness, of an inference, or with putting it into this, or that, class. Moreover, in the case of SA as well as of PA, there may occur very many different

[6]*Tatra svārtham trirūpā lingād yadanumeye jñānam tad anumānam.*
SNS, NB, p. 98.
Of the two (SA and PA), inference for oneself is the knowledge of the inferred object obtained by means of the three-featured logical mark.

kinds of intentions. For example, the inferer may draw the inference in his SA to add to his knowledge, to remove a doubt, to support a pre-existing belief, to find some solace, to feed an existing prejudice, etc. Similarly, he may demonstrate a PA to a neighbour to give him some new information, to strengthen a prejudice of his, to break his romance, to cause in him some unhappiness, etc. Since intentions have nothing do with the validity or logical worth of an inference; they cannot play any role in making an inference of this kind or that kind. One may draw an SA inference only with the intention to be able to successfully demonstrate it, as soon as an opportunity to do that presents itself, to his neighbour. He may even draw it, when the latter is near, in a slow voice, but audible enough to the latter with the intention of making him feel nervous, believing that his knowing the conclusion would make him nervous. Any inference can be drawn with any sort of intention without affecting its logical character. That is why there is no point in classifying inferences, when one is conducting a logical enquiry into their nature, on the basis of the inferer's intentions in drawing them, or demonstrating them. If an inference is valid and its premises are true, it would yield a true information to the inferer, or to the hearer, whatever may be the former's intention in drawing it.

When one infers something from something else, he *does* something and he does it intentionally. Inferring is an action and not an event which simply happens to him. As is the case with every intentional action, inferring too can be done with morally good, bad, or indifferent, intentions. The intention with which an inference is drawn may be relevant to its moral or ethical valuation even though it is not relevant to its logical valuation. An inference drawn with a morally-good intention may be invalid, and one drawn with a morally-vile intention valid, because the criteria of logical valuation are indifferent to moral considerations. This is the plain truth about the nature of inferences and it has no adverse implication for logic which aims at determining the logical conditions for their soundness, cogency, etc.

2. (c) PA knowledge-yielding to its Demonstrator as Well

It cannot be claimed, however, as the classical account of the SA–PA distinction, and its modern interpretation, seem to do, that only an inferer's SA yields some knowledge to him and not his demonstration of it in a PA to another person, that the latter yields knowledge only to the demonstratee. The idea behind the claim is that, since the demonstrator already knows by means of his SA the truth he demonstrates in his PA

to the demonstratee, there is no question of his use of the PA to give him any (new) knowledge. Therefore, the claim goes, PA is *jñānātmaka* (knowledge-yielding) only to its demonstratee, or recipient, and not to its demonstrator or giver.

It does sometimes happen that, when one tries to demonstrate to another person, an inference, which he considers until then impeccable, he discovers that it needs to be supplemented, strengthened, modified, or even rejected, that its conclusion has to be a little, or completely, different, from what he had himself, in SA, taken it to be. All this is likely because in PA he has to make explicit every component of the reasoning to make it convincing to the demonstratee. He may even have to add a new premise, or modify an existing one, or draw, to satisfy a query of the latter, some implication or implications, from one, or more than one, premise, which he had not drawn in SA, and thereby to modify his old conclusion. Many a time we see an implication, which we had not previously seen, as a result of a dialogue with, or a questioning from the demonstratee, of our PA. A teacher does sometimes modify the conclusion of his SA in course of, or as a consequence of, his use of a PA to demonstrate the latter to a student of his. This characteristic of inter-personal argumentation or reasoning is very convincingly illustrated in a good number of Platonic dialogues. I am sure, at least some classical Indian philosophers must have altered their SA conclusions as a result of their dialogue (*samvāda*) with a student, or an opponent (*prativādī*).

To illustrate what has been said above, let us imagine a dialogue between a Cartesian philosopher (CP) and a modern analytical philosopher (AP). The former first draws the following SA:

> God exists
> because God is perfect (since the concept of God is the concept of a perfect being)
>
> (assuming the *vyāpti*: 'Whoever is perfect exists' (because lack of existence being a lack or deficiency would make him imperfect).

Thinking his SA as impeccable, the Cartesian offers it in the form of a PA to the analytical philosopher who then reacts to it. The dialogue which ensues runs as follows:

The Cartesian philosopher	(offers the PA in the Dharmakirtian form): God is perfect and Whoever is perfect exists and Whoever does not exist is not perfect.
AP (reacts):	Your *pakṣa vākya* 'God is perfect' is defective. Being

> perfect, like being red, is a real predicate, and therefore it can be affirmed or denied only of a thing which exists. There is no point in saying of a thing it is perfect, or is not perfect, if it does not exist. This means that being perfect presupposes the existence of God to which it is attributed. Therefore, it cannot be the *hetu* to prove the existence of God. Further, in *anumāna*, the existence of the *pakṣa* is to be taken as indisputable, whereas in your PA, the existence of God, when God is the *pakṣa*, is itself to be inferred, that is, the *anumeya*, or *sādhya*. Hence your PA is not in order.

If CP is convinced of the logic of AP's response, not only would he come to know of something which he did not know earlier, but may even reject his original SA, or at least begin to entertain some doubt about its validity.

Neither DK, nor DU, mentions this possibility. But none of them has to reject it. Without any adverse effect on their general theory of inference, both of them may admit the potentiality of a PA to occasion in its demonstrator a change of the above kind, or of some other kind, since it can occasion many different kinds of logical or epistemic changes depending on the demonstratee's responses and the demonstrator's mindset. A reasonable way to understand their view that PA is knowledge-yielding to the demonstratee, according to me, is to take it as claiming that the demonstrator primarily intends to communicate to the demonstratee, by means of his PA, some specific piece of knowledge conveyed by its conclusion, without implying that he himself is immune to learning from the demonstration. Likewise, in SA, the inferer, it can be said, primarily intends that he himself may acquire some specific piece of knowledge conveyed by its conclusion, without implying that the SA may never pass on some piece of knowledge to someone else. They may also admit that in some cases one's use of PA may, and in some others, it may not, give him an opportunity to learn something from its demonstration.

2. (d) A Purely Logical Reason against the Division

There is another reason, and a logically conclusive reason, for questioning the viability of the division of *anumāna* into SA and PA. The set of conditions for the validity of an inference, whether it is in the SA form,

or in the PA form, is the same. Whether an inference is meant for the cognitive benefit of the inferer, or for that of someone else, it must be valid in order to be a *pramaṇa*, a piece of *samyak jñāna*. And, to be valid, it must meet, not only according to DK, but according to all others as well who upold the SA–PA division of inference, the same set of conditions in both the cases. As DK says, any *anumāna* must have a three-featured logical mark (*trirūpa linga*), no matter whether it is SA or PA. They may differ in their forms but the bond between the premises and their conclusion in a valid SA, or PA, is of the same strength or stringency. To determine its validity, in the case of neither of them, there is a rule of inference which is to be used in the case of one and not to be used in that of the other, and there is not any kind of proposition which can be a constituent of one and not of the other.

The order in which the constituent steps or propositions occur in SA and in PA is said to be different. For example, in the SA:

(1) (a) Here is fire
Because (b) here is smoke,

the conclusion occupies the first position, and the *pakṣa vākya*, which is a part of the *hetu vākya* in DK's logic, is in the second position. In the PA:

(2) Here is smoke and wherever is smoke
there is fire, as in a kitchen, and wherever
is no fire, there is no smoke, as in a pond,

the conclusion is not mentioned. Only the full statement of the three-featured *linga*, the complete *hetu vākya*, is given. The *hetu vākya*, as will be shown in the next chapter, is the complete set of premises of the inference in which it occurs. Therefore, it can be said that in PA only, the set of premises is given.

In (1), the example of SA, the *pakṣa vākya* is there, but the *vyāpti* 'Wherever there is smoke ... no smoke ...' is not mentioned, but it is not absent. It is assumed and is used to get the conclusion. In (2), the conjunction of the *pakṣa vākya* and the *vyāpti*, which is the *hetu vākya*, or premise, is alone given. The conclusion remains unmentioned because its entailment by the conjunctive premise is obvious. But this difference in the order of constituents does not make (1) and (2) two different types, or forms, of inference. It is the conjunction of premises in any valid *anumāna* which entails its conclusion. Conjunction is commutative. Therefore, it does not matter which premise is put as the first conjunct and which one as the second, or third, etc. Entailment is asymmetrical.

Therefore, it does not matter whether the conclusion is mentioned before, or after, the premises. Neither does it matter whether any premise, or conclusion, is left unmentioned because any inference, SA or PA, may be enthymemetical. Any constituent of an inference can be left unmentioned depending on the nature of the context, universe of discourse, the logical maturity of the addressee, or of the inferer, etc. Since the order in which the constituents of a deductive inference (which SA and PA are) are arranged does not play any role in determining its validity, not only the division of inference into SA and PA, but also the entire exercise of Aristotle to determine the figures and moods of a syllogism are of no great logical value.

When we put the conclusion first, and after it all the premises, relating the conclusion with the premises by 'because' we have:

(1a) Here is fire
because
Here is smoke and wherever is smoke
there is fire, as in a kitchen, and wherever
is no fire, there is no smoke, as in a pond,

which is an example of SA. When we put the premises first and then the conclusion, relating the former to the latter by 'Therefore', we get:

(2a) Here is smoke and wherever is smoke, there
is fire, as in a kitchen, and wherever is no
fire, there is no smoke, as in a pond,
Therefore, here is fire,

which is an example of PA. (1a) and (2a) are equivalent because 'therefore' refers to the relation which is the converse of the relation referred to by 'because'. If the conclusion were not mentioned in (2a), as DK suggests, because its entailment by the premises is obvious, even then (2a) would be equivalent to (1a). Since SA and PA are not two logically different, or non-equivalent, types or forms of inference, it is not logically justified to treat them as representing two *absolutely* different, or even different, *types* of inference. An inference can be called logically different from another only if the set of rules which legitimize drawing its conclusion from its premises is not wholly identical with the set of rules which legitimize drawing the latter's conclusion from its premises. Since this is not true of SA and PA, there is no logical reason for calling them two different types of inference, or for dividing inference into SA and PA, claiming that these

two and only these two represent the two basic or the broadest types, or forms, of inference.

3. SA Primary but not Self-complete

In the context of DK's theory, what one demonstrates to another person in a PA must be a truth ultimately, or basically, drawn by him, or, by someone else, in an SA. Suppose A communicates to B by means of a PA the truth P. Then P must be a truth already known to A because, if he does not know it, he cannot construct a demonstration for it. And, it must be a truth known to him as the conclusion of his SA, or, of a PA, demonstrated to him by someone else. It cannot be a truth known by perception because DK, as other Buddhist logicians do, holds the theory of *pramāṇa vyavasthā* the theory of the complete objective, or, operational exclusivity of a *pramāṇa* source of knowledge. According to this theory, a thing known by the use of one *pramāṇa* cannot by known by that of any other *pramāṇa*. That is, every *pramāṇa* operates exclusively on the object which is the object of knowledge in its use. For example, if a man comes to know by perception that the hill H has fire, he cannot again know that H has fire by inferring that it has when he sees smoke coming from H. His second judgement 'H has fire' would not be a piece of knowledge, DK or DU, would say, because H has already been known, by perception, to him to have fire. One of the essential features of knowledge, we have seen, is that the object known must be one which is not already known (*anadhigata*). Therefore, his earlier, perceptual, cognition of fire on H would be, but his later conclusion of the presence of fire on H from that of smoke there would not be, a piece of knowledge. Therefore, what is known by inference, SA or PA, cannot be something known by an earlier (or even a later) perception, and vice versa. Putting it summarily, the same thing cannot be known twice, or by the use of more than one *pramāṇa*.

Every PA cannot be the demonstration of a truth known to the demonstrator by means of another person's PA, otherwise there would be infinite regress. And, as explained above, it cannot be the product of anybody's perception. Therefore, ultimately, or, in principle, there must be a prior SA had by A, or by someone else, in which the truth P was inferred, to be further communicated or demonstrated in a PA.

Neither DK, nor DU, clearly affirms that SA is primary, or more basic, when compared to PA. But, as I have shown, the primacy of SA has to be maintained. None of them says anything which goes against doing that. But they do give the impression that SA is self-complete. This, it

seems to me, cannot be admitted. To call it self-complete would mean that no SA, in principle, needs to be ever used as a PA. If this is admitted, there would arise a very unpleasant and inconvenient possibility for DK (as well as for anyone who makes the admission). It would be unpleasant because he would consider it highly undesirable. It would be inconvenient, since his logical theory would show him no way to stop it from arising nor would it give him any logical ground to call it undesirable. This can be shown as follows.

If SA is self-complete, a knower capable of drawing an SA inference may remain all his life only a *svārthānumānī* (a user of SA). He may not be deficient in any manner as far as the acquisition of inferential knowledge is concerned, even when he offers no PA, that is, communicates no bit of his inferential knowledge, to anybody else. And if his SA's are comprehensive of the truths that he needs to lead a successful practical life, he would not need even anyone else's demonstrating to him any truth by means of a PA. This is possible because to do SA, one does not need a prior PA, though to do PA one needs a prior SA, as has already been shown. If he is a philanthrope he may give a PA to someone else to communicate to him a truth. But this would be an entirely one-way process: he would enrich the latter's inferential knowledge without himself receiving anything from him to enrich his own. But he may not be a philonthrope and then may dispense with social participation which interpersonal dialogue resulting from a PA of his may occasion. Such a monadic life would not only according to Buddhism but even according to other Indian philosophies, be highly undesirable. But if SA is conceived as self-complete, then DK, or any Indian logician who holds such a view, would have no logical or epistemological reason to call it undesirable. This would be a serious lacuna in DK's theory because neither his theory, nor any other Indian theory, makes the existence of an individual leading such a monadic life logically impossible. It may be suggested here that DK (or the other logicians) may have an ethical principle declaring that it is ethically undesirable for anyone to lead a monadic life, communicating none of his SA's in any PA to another person. But still his logical theory would contain nothing which could show that it is, on a logical ground, undesirable, or deficient in any way. This sort of ground it would have if it broadens its concept of SA by admitting that at least some SA's are not self-complete and they need to be tested or reconfirmed by means of their presentation as appropriate PA's. If this is done, then a logical reason would be available to desist an individual from being a monadic knower by restricting himself to his SA's, namely, the reason that his inferential knowledge resulting out of his SA's cannot be complete or adequate because at least some of his SA's need to be

re-checked or re-confirmed by being presented as relevant PA's, by being used in some interpersonal use of logic.

4. Fusion of SA and PA in Creative Reasoning

An inferer's SA may thus sometimes get modified as a result of his giving it in the form of a PA to someone else. And, if the demonstratee does not raise any question, but accepts his PA, his conviction of the validity of his SA would get thereby further strengthened. In fact, very often one's SA gets tested when it is converted into a PA to an intelligent demonstratee.

If an inference is valid, it is valid, and not valid for one person and invalid for another. 'Valid' is not like 'expensive'. Something may be expensive for one person and not expensive for another. 'Valid', like 'true', does not take the addendum 'for X' after it. When one draws a conclusion in an SA, and considers the inference valid, he considers it valid in an objective, impersonal, sense. In every SA, there exists the implicit reference to persons other than the inferer, even though it is made for the cognitive benefit of the inferer. It implies the claim that anyone who knows how to draw an SA would find it valid, and if he does not consider an SA valid, when it is valid, there is something wrong with his logical equipment. This means, in a sense, that every SA contains a pointer to a corresponding PA, that it is not absolutely restricted to the inferer.

Creative thinking, or creative reasoning, which creative thinking invariably is, is a very good example of the fusion of SA and PA in the same exercise of thinking. The creative thinker tries to arrive at a conclusion from some premise or premises obviously for his own cognitive benefit. But he imaginatively splits himself into two persons, the asserter of the conclusion (*vādī*) and its critic (*prativadī*). As its asserter, he presents it with all the backing for it he can collect, and presents it to the critic in himself for acceptance. As its critic, he imagines all possible objections to it he can think of, and as its asserter tries to meet them as best as he can. He presents it as his final thesis only when he satisfies the critic in him, and if he still finds some objections unanswerable, he presents it as a tentative position, or as a position which can be presented, say, because of the complexities involved in the very nature of the problem he is trying to solve, only as a highly plausible position and not as a conclusively proven one. Such a thinker draws inferences for his own enlightenment, as one is said to be doing in an SA, but he also tries to enlighten others by elaborating his reasoning to a possible critic in him and trying to meet his objections. We may call it SA expanding itself into PA or PA performed as SA, if we want to characterize it in terms of the SA–PA distinction. Or, we can also say, it is an instance which nullifies

the claim that SA and PA are two absolutely different types of inference.

Every inference is not simple like that of fire from smoke. In some cases, the premises may form a complicated set with the result that without a detailed analytical examination of their logical capabilities and interrelationships, it is not possible to ascertain what they together yield. Then, even if one intends to ascertain that only for his own knowledge, he may have to present them to himself in as clear and unambiguous language as possible, and in some cases he may have to use even logical symbolism. Therefore SA may need in some cases as explicit verbal formulation as PA is said to do. Similarly, when one imagines a possible reader or critic of his views and presents them in a suitable manner to make them intelligible and convincing to him, he virtually draws a PA inference in the privacy of his mind, very much similar to the way in which he does SA. All this shows that SA may be as linguistic as PA and PA may be as knowledge-yielding to its demonstrator as SA is claimed to be to its inferer. Therefore, DU's claim that SA and PA are absolutely different from each other does not seem to be supported by the facts about the actual way or ways in which the logical act of inferring is really conducted.

It is the fact that *anumāna* is considered to be a *pramāṇa*, that is, knowledge, or a giver of knowledge, and not any feature of its logic, which seems to be largely responsible for its division into SA and PA. It is a natural question to ask of a piece of knowledge whose knowledge it is, and, similarly, of a giver of knowledge to ask to whom does it give knowledge. It is equally natural to answer the former by saying it is inferer's knowledge, or someone else's knowledge, and the latter by saying that it gives knowledge to the inferer, or to someone else. Either one of these answers makes it natural to divide *anumāna* into SA and PA, *anumāna* drawn for the inferer's cognition and *anumāna* drawn for someone else's cognition. But from it, it does not follow that as logical things SA and PA have to be absolutely different, or exclusive of each other. There may be differences between them, and it may be worth while to explain what these differences are. But to go to the length of saying that there is nothing common between them, as DU does, amounts to overshooting the target of differentiating between them. But in spite of SA and PA not being absolutely different from each other, DK's discussion of the two is worth studying and examining because the theory of inference he presents via their characterization contains a number of valuable insights.

FOUR

Inference for Onself
(Svārthānumāna)

1. Structure of Inference

In Indian logic, Buddhist as well as non-Buddhist, the structural frame of any inference *Svārthānumāna* (SA) or *Parārthānumāna* (PA) is as follows: Something, say F, is indirectly or mediately known, that is, inferred, to be present (or absent) in something else, say H. That which is thus known, or is the object of inference, as we have seen, is called *'anumeya'* or *'sādhya'* and that in which it is inferred to be located, present, or absent, *'pakṣa'*. But in *Nyāyabindu* (NB) sometimes *'anumeya'* is used to denote the *pakṣa*, and sometimes to denote the *pakṣa* qualified with the *sādhya*. In which sense it has actually been used is clear from the context, or the universe of discourse, in which it occurs. The inference of the *sādhya*, F, in H, is made possible because of the presence in H, the *pakṣa*, of a logical mark or sign (*linga, hetu*) say S, of the *sādhya*. S would be a logical mark of the *sādhya* F when there is an invariable relation, of a certain type, between S and F.

2. Three Features of *Hetu*

According to DK, to affirm that S is a logical mark (*hetu* or *linga*) of F is to affirm that S has three features. Therefore, as already mentioned, he defines SA as indirect cognition of the inferred object in the *pakṣa* on the basis, or ground, of a three-featured logical mark (*trirūpa linga*).[1] For

[1] *Tatra svārtham trirūpalingād yadanumeye jñānam tad anumānam*. SNS, NB, p. 98:3.

example, when A sees smoke coming from a hill, he infers the existence of fire in that hill on the ground that the existence of smoke in a thing signifies, or is an evidence, or mark, of the existence of fire in that thing. This relation between smoke and fire, being one of invariable concomitance, can be stated in the universal proposition 'Wherever there is smoke, there is fire' (x) (Sx ⊃ Fx). Here the hill in which smoke is seen is the *pakṣa* or the locus, fire is the *sādhya*, the object inferred to be present in the hill, and smoke is the *linga* or *hetu*, the logical mark, of fire. Smoke is the *linga* of fire because it has, as will be explained in the discussion that follows, what DK calls the three features, or constitutive properties, of a *linga*. The three features of a *linga* are the following:

(a) its being necessarily present in the *pakṣa*. DK uses the word *'anumeya'* for *pakṣa* here, as quoted below (see footnote);
(b) its being present only in *sapakṣa*, an object similar to the *pakṣa* in having the object or property that is being inferred to exist in the *pakṣa*; and
(c) its being necessarily absent, or being never present, in any *asapakṣa* or *vipakṣa*, an object dissimilar to the *pakṣa* on account of not having the inferred object or property.[2]

Each one of (a), (b) and (c) is a necessary feature of a *linga*, and conjointly they constitute its common, or, formal conditions because every *linga* must have all of them. Lacking any one of them would make a *linga* defective, or a non-*linga*, because a defective *linga* cannot yield a valid inference. In the inference of fire on the hill because of seeing smoke on the hill, smoke is the *linga* of fire because it has all the three features: (a) smoke is certainly present in the hill, the *pakṣa*, as it is perceived to be there, (b) it is present only in a *sapakṣa*, like a kitchen, which is similar to the hill, the *pakṣa*, in having fire, and (c) it is necessarily non-existent in an *asapakṣa*, or *vipakṣa*, like a pond, which is dissimilar to the hill because of not having fire. *'Sapakṣa'* means a thing which is similar to, and *'vasapakṣa'* or *'vipakṣa'* a thing which is dissimilar to, the *pakṣa*.[3] Similarity, as well as dissimilarity, is a one-point feature. To be a *sapakṣa* of the hill, a thing has to be similar to it only in one respect, that is, in the respect of having fire, the *sādhya* which the hill is being inferred to have. No

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Of the two (SA and PA), the knowledge of the inferred object obtained by the inferer from the three-featured logical mark is his inference for himself.

[2]*Trairūpyam punarlingasyānumeye sattam eva, sapakṣa eva sativam, asapakṣe cāsattvam eva niścitam.* SNS, NB, p. 102: 5.

The three-featuredness of the logical mark consists in its being necessarily present in the locus, present only in the similar (to the locus), and never present in the dissimilar (to the locus).

[3]SNS, NBT, pp. 112–14.

other similarity is required. A kitchen is similar to the hill only in this and in no other respect. To be an *asapakṣa* of the hill, in a like manner, a thing is to be dissimilar to the hill only in the respect of not having fire. No other dissimilarity is necessary. There may exist other similarities between the *pakṣa* and *sapakṣa* and other dissimilarities between the *pakṣa* and *asapakṣa*. But these similarities, or dissimilarities, play no role in making the *sapakṣa* a *sapakṣa*, or the *asapakṣa* an *asapakṣa*.[4]

It is not by itself that a *linga* leads to the cognition of the inferred object. The unseen smoke cannot lead to the cognition of fire in the hill. It is first to be seen, cognized, in the hill. But though necessary, that too is not sufficient. The cognition of smoke in the hill can authorize one to infer the existence of fire in the hill only if it is accompanied with another true cognition that smoke is the *linga* of fire, that it has the three relevant features required of a thing to be a *linga* of the fire in the hill. The object of inferential cognition which is here, fire in the hill, as is the case with the object of any inference, is outside the zone of direct cognition (*parokṣa artha*). It is because of its link with smoke, which is its three-featured *linga*, and not because of anything else, that its inferential cognition is made possible.[5]

To infer,

(IV) There is fire on the hill

the cognition of the fire's three-featured *linga*, smoke, is necessary. The full statement of it, the *linga*, or *hetu vākya*, would run as follows: (i) There is smoke in the hill, (ii) wherever there is smoke, there is fire, as in a kitchen, and (iii) wherever there is no fire, there is no smoke, as in a pond. Each one of (i), (ii) and (iii), for DK, is a necessary condition, but only their conjunction is the sufficient condition, for drawing the inference as stated in the beginning of this section.

DK's description of the three features of the *linga*, as (i) necessarily present in the *pakṣa*, (ii) present only in the *sapakṣa*, and (iii) never present in the *asapakṣa*, is a purely formal account because all the terms '*pakṣa*', '*sapakṣa*', '*asapakṣa*', and also '*sādhya*' which too is involved in the description though it is not explicitly mentioned, are merely forms, or empty slots, to be filled in with concrete matter to make it an actual

[4]Ibid.

[5]*Tasmāt parokṣārtha nāntarīyakatayā niścayanam eva lingasya parokṣārtha pratipādanavyāpārah. Nāparah kaścit.* Ibid., p. 103.

Therefore, the ascertainment of the logical mark's invariable concomitance with the object not directly (but indirectly) cognized is alone operational in yielding the cognition of the latter. Nothing else is.

description of a particular *linga*, the *linga* of a particular *sādhya* in a particular inference, or in a particular inferential context. Like the other terms mentioned above, '*linga*' too is a contextual, or functional, term. Anything is a *linga* of anything else only if it functions as a go-between which makes possible the inference of the latter, the *sādhya*, in the *pakṣa*. This it can do only when it is used as such a go-between in an inferential context. This means that nothing is a *linga* in itself or by itself. It is its use, or performance of a certain kind of role, in an inferential network which makes it a *linga*; it makes it a *linga* in, or of, that network, and not a *linga* in any absolute sense. Therefore, smoke is the *linga* of fire only in the episode in which fire is inferred to exist in a thing because of a certain relationship between fire and smoke, and not its *linga* in any absolute sense. Doing a little bit of reconstruction on DU's explication, we can design an inference as follows,

> There is fire in that house
> because
> smell of burning leather is coming out of it, and wherever there is smell of burning leather, there is fire, as in a tannery, and wherever there is no fire, there is no smell of burning leather, as in a shoe-shop

in which the linga of fire is not smoke but the smell of burning leather. DU does not give any example of this type, nor does he explicitly mention the possibility which it exemplifies. But nothing which he has said implies that extending his explication to include this possibility would go against what he has said, or intended to say on this theme.

It is obvious from the above example that the determination of the *linga* of anything is an empirical, inductive, matter. Only by observing the relationship between fire and smoke in very many different cases can we decide that smoke can be used as a *linga* of fire in an inference, SA or PA. But giving a formal account, or definition of it, as DK has done in giving its three features, is not an empirical but a conceptual, or logical, matter, undertaken solely from the point of view of ascertaining what sorts of features a thing must have to function as a *linga* and to make the inference, in which it is used to infer that of which it is the *linga*, valid.

Of DK's formal features of a *linga*, which every *linga* must have, the second and the third are equivalent. This is so because the third 'never present in an *asapakṣa*' is only the transpositive of the second 'present only in a *sapakṣa*.' If the *linga* is to be present only in a *sapakṣa*, then it transpositively implies that it cannot be present in an *asapakṣa* (in that which is not a *sapakṣa*). Using l for '*linga*' and x as a variable for a particular

location, or object, what the second condition, 'The *linga* is present only in a *sapakṣa*', says can be stated as,

(ii) (*l*) (x) [(There is l in x) ⊃ x is a *sapakṣa*]. Similarly, what the third condition, 'The *linga* is never present in an *asapakṣa*', says can be stated as,

(iii) (l) (x) [(x is not a *sapakṣa*) ⊃ (There is no l in x)]. (iii) is obviously the transpositive of (ii) and therefore equivalent to it. After laying down (ii), the addition of (iii) in the definition is, consequently, redundant.

While admitting that (iii) is made redundant by (ii), DU tries to justify DK's retaining both of (ii) and (iii), in his definition, on pragmatic, or heuristic, grounds. His justification runs as follows.

Each one of (ii) and (iii) signifies a strict, absolute, or exclusive, condition. When so understood, each one would imply the other and make its retention in the definition of the *linga* redundant. Therefore, keeping either one of them in the definition would do. He who realizes this logical truth, even if he, for example, retains only (ii), he would not be ignoring the condition which (iii) signifies. He would take into account positive instances in which when there is smoke, fire too is present there, as required by (ii). But he would also try to be sure that where there is no fire, there is no smoke, as implied by (ii) (or required by [iii]). But if he is not logically so sophisticated as to realize that (ii) implies (iii), or that (ii) is to be taken in an exclusive sense, he may take it in a loose, liberal, or non-exclusive, sense in which it does not imply (iii). Then he would be really taking (ii) as equivalent to 'The *linga* is present in *sapakṣa*', simply requiring that wherever there is smoke there is fire, and not requiring as well, as does 'The *Linga* is present in *sapakṣa* only', that wherever there is no fire there is no smoke. He may not then confirm that the cases in which fire is absent, smoke too is absent. If there is any such instance, smoke would cease to be a *linga* of fire, and any inference in which it is used as a *linga* would be invalid. It is to avoid the possibility of such lapses, to instruct people to take (ii) and (iii) in an exclusive sense, to take into account both positive and negative instances of the *linga*–*sādhya* relationship, the master includes says DU, both (ii) and (iii), even though it is not necessary, or very elegant, to do that, as one of them is redundant. When both are separately stated as two conditions, a user of the theory would check both, positive and negative, sorts of cases and thereby be saved from committing inferential lapses that he is liable to by ignoring either, positive or negative, sort of cases.

DU gives an example of an invalid argument resulting from taking (ii) 'present in *sapakṣa* only' as equivalent to 'present in *sapakṣa*', and therefore taking into account only the *linga*'s presence in *sapakṣas*, and not checking its absence in any *asapakṣa*. Suppose, he says, one infers of a certain person that,

> He is dark-complexioned
> because
> He is that woman's son,
> and her other known sons are dark-complexioned.

He uses 'being that woman's son' as the *linga* of the person's being dark-complexioned and considers it a sound *linga* because he finds it supported by *sapakṣas*, her other sons he knows, since they too are dark-complexioned. He does not try to verify whether or not it is absent in any *asapakṣa*, that is, whether or not it is true that one who is not dark-complexioned is also a son of hers. The moment he comes across a person whom he has not known so far, who is fair-complexioned, that is, not dark-complexioned, and also a son of hers, the possibility of which he has not eliminated, he would realize that his inference is invalid. DU considers this inference invalid because he believes that one's being dark-complexioned is not because of his being the son of any particular woman. Rather, it is because of his mother's having eaten green vegetables during her pregnancy when she was carrying him in her womb. Whether or not we accept his view about the cause of anyone's being dark-complexioned, it is obvious that not being sure of the absence of the *linga* in every *asapakṣa* would leave open the possibility of the inference being invalid. That is, the condition (iii), 'being necessarily absent in an *asapakṣa*' may be stated separately, or understood as implied by the condition (ii), 'being present in a *sapakṣa* only'. But negative instances, of the absence of the *sādhya* necessarily accompanied with the absence of the *linga*, have to be taken into account to ensure the validity of any inference. Had the inferer in the above example taken the condition (ii) 'present in *sapakṣa* only' strictly, in an absolute, exclusive, sense, he would have realized that it implies (iii), the necessary absence of the *linga* in every *asapakṣa*. He would not have then drawn the inference he draws because he would have realized the defectiveness of the *linga* and therefore the invalidity of the inference based on it.[6]

[6]SNS, NBT, pp. 109–10.

3. Three Types of *Hetus*

DK avers that not only are there three and only three constituent properties of a *hetu*, there are also three and only three types of *hetus*.[7] The former having already been discussed in Chapter 4.2, in this section I will discuss the three types of *hetus*, and show that the inference generated by each one of them is formal and deductive. In Chapter 9, I will discuss his claim that his three types of *hetus* include all possible *hetus* and there is no other which cannot be interpreted as an instance of any one of the three. His attempt to show it, I will call, his proof of the completeness of his typology of *hetus*.

Since each one of the three features of a *hetu* is a necessary, or constitutive, feature of it, it is obvious that a fully stated *hetu vākya*, the full statement of a *hetu*'s three features, must be a three-membered conjunction. Its one conjunct would be: (a) a *pakṣa vākya*, a proposition stating the presence of the *hetu* in the *pakṣa*, another (b) a *vyāpti vākya*, an affirmative universal proposition, stating the invariable presence of the *sādhya* where the *hetu* is present, and the last too (c) a *vyāpti vākya*, a negative universal proposition stating the invariable absence of the *hetu* where the *sādhya* is absent. Since (b) and (c) are equivalent, because (c) can be obtained from (b) by transposition, as has already been shown in Chapter 4.3, even only one of them, say, (b), may be used in an example of inference to illustrate its general logical features if doing that contributes to brevity or expositional elegance.

A *hetu vākya*, the conjunction of (a), (b) and (c), is also the conjunction of all the premises of the inference whose *hetu vākya* it is. In DK's theory of inference, no other premise is required to yield the conclusion. Secondly, since conjunction is commutative, it does not matter in which order (a), (b) and (c) are placed in the conjunction which the *hetu vākya* is. Thirdly, even if (a), (b) and (c) are kept separate, that is, as (a), (b), and (c), it would not matter because from,

a
b
c

we can infer (a.b.c.).

[7]*Trirūpāni trīṇyeva lingāni.*
SNS, NB, *ca.* 115.10.
Three-featured logical marks are of only three types.

To sum up, every inference must have a *hetu*, and therefore a *hetu vākya*. Of the three conjuncts of the *hetu vākya*, of the two *vyāpti vākyās*, affirmative and negative, we may sometimes have, as already shown, only one of them because each one of the two transpositively implies the other. This means that the *hetu vākya* must have at least two conjuncts, one of which would be a *pakṣa vākya* stating the existence of the *hetu* in the *pakṣa*, the particular place, person, or thing, in which the existence or non-existence, of the *sādhya* is (or is to be) inferred, and the other the *vyāpti vākya*, affirmative or negative, stating the invariable presence of the *sàdhya* where the *hetu* is present, or the invariable absence of the *hetu* where the *sādhya* is absent. The *pakṣa vakya* is, to be elaborated a little later, an existential proposition, or a proposition with an existential claim. Therefore, since the *hetu vākya* in every inference is the complete set of its premises, every inference has to have at least one existential proposition among its premises. The conclusion of any inference is entailed by the conjunction of the premises. Therefore, it is of no logical significance if the two or three conjuncts of the *hetu vākya* are treated as distinct premises, or as the components of the *hetu vākya* which alone is treated as the single premise. Nor does the order in which these allegedly distinct premises are placed, or conjoined in the *hetu vākya*, matter because conjunction, as pointed out, is commutative.

Some non-Buddhist logicians treat the *pakṣa vākya* and the *vyāpti vākya* as two separate premises. But that alone would not make their theory of inference different from DK's. The non-Buddhist form of the inference,

> There is fire on that hill
> because
> There is smoke on that hill
> Where there is smoke, there is fire,
> as in a kitchen

is equivalent to DK's version,

> There is fire on that hill
> because
> There is smoke on that hill and
> where there is smoke there is fire, as
> in a kitchen.

Each one of the two forms can be obtained from the other. The latter can be obtained from the former by conjoining its two premises, and the former from the latter by simplifying its conjunctive premise.

The three types of *hetus* are, (i) *Anupalabdhi hetu*, (ii) *Svabhāva hetu*, and (iii) *Kārya hetu*. *Anupalabdhi hetu* is the non-cognition of a perceivable object used to infer the non-existence of the object. It is to be used when all the auxiliary conditions for the cognition of the object, like the availability of adequate light, and suitable location of the object in relation to the cognizer, are satisfied. For example, when we infer that there is no jar at a particular place on the ground that it is not perceived to be there, we use the non-perception of any jar there as an *Anupalabdhi hetu*. *Svabhāva hetu* and *Kārya hetu* are logical reasons for inferring the existence of a property in a thing from the existence of another property in it. A plant's being a *Śimśapā* (a tree of a particular species) is a *Svabhāva hetu* for inferring that the plant is a tree. A *Kārya hetu* is the effect of a thing when its existence is used to infer the existence of its cause. When we use the presence of smoke at a place to infer the existence of fire there because smoke is the effect of fire, we use the presence of the effect–object, smoke, as a *Kārya hetu* for inferring that of the cause–object, fire. The logic of each one of the three types of *hetus* will be discussed separately, beginning with that of *Anupalabdhi hetu* in the next chapter.

FIVE

Non-cognition as Logical Reason (Anupalabdhi Hetu)

1. The Context of Application

Anupalabdhi (*Na* [non] + *upalabdhi* [cognition]) literally means non-cognition. *Anupalabdhi hetu* (AH), therefore, means non-cognition of a thing which, subject to the thing's satisfying a set of conditions, functions as a logical reason, or warrant, for inferring the non-existence of that thing. For DK there are only two types of cognition, perceptual and inferential. Naturally, then, non-cognition here means non-perception. It cannot mean non-inference because it is inference itself in which it works as a *hetu*, that is, as a component of it. He discusses in detail the visual non-perception of a thing at a certain place as the *anupalabdhi hetu* (AH) authorising the inference of the non-existence of that thing at that place. He holds that other kinds of non-perceptions functioning as *hetus* can be explained, or analysed, on the same, or, similar, lines as by which he explains, or analyses, the functioning of visual non-perception as an AH. I will explain in this chapter the functioning of AH with the help of an example in which visual non-perception (*dṛśyānupalabdhi*) of a thing functions as a *hetu*. In the discussion that follows, therefore, perception would mean visual perception unless otherwise indicated.

DK does discuss ten other varieties of AH, though he calls the visual non-perception type primary or basic. His discussion of the remaining ten varieties is also very illuminating. They will be taken up in the next chapter.

According to DK, the non-perception of everything, or of a thing in

every state of affairs, is not a logical reason or ground for inferring that it does not exist. For example, if a thing is by its very nature unperceivable (*adṛśya*), as is a ghost or omniscience, or using a modern example, a virus, its non-perception at a particular place would not entail or imply that it does not exist there. It would not, because, even if it is there, it would not be perceived. Therefore, it would be wrong to infer its non-existence at any place from its non-perception at that place.

But if an object, by its very nature, is perceivable, then its non-perception at a certain place, one may say, would be a *hetu* for inferring that it does not exist there. And, he may add, this *hetu* would be an AH because it is the *anupalabdhi* (non-perception) of the object authorizing us to infer the object's non-existence. This is, in a sense, the common-sense understanding of the status of a perceivable object, or of the logical role of its non-perception as a *hetu* for inferring its non-existence. DK sees the point of the common-sense position but he also realizes that it needs to be stated in a more precise and comprehensive manner. He digs deep into it, without saying in so many words that he does the digging, and brings on the surface what it involves or implies. He then uses the ideas he thus obtains to formulate the doctrine of AH in a technical manner, as a logician normally does. His formulation of the doctrine very clearly reveals his remarkable insight in determining what could be an appropriate set of premises for entailing the non-existence of a perceivable object, his insight into the logic of validly deducing a negative existential proposition. Along with doing that, it equally clearly reveals his keenness to remain, even in this highly technical doctrine of his, faithful to, or respectful of, the common sense way of relating the non-perception of a perceivable object with its non-existence.

Using what DK says on this theme and also DU's explication of it, I will present his doctrine of AH. To ensure intelligibility, I will not strictly follow the order in which he presents his ideas, or even the order in which DU comments on them. It is much more important to present his formulation of AH in a clear, elegant, and systematic manner, than to remain faithful to the actual order of presentation adopted by him or his commentator.

2. Conditions of Perceivability

A perceivable object is perceived, DK would say, not always but only if it fulfils a set of conditions. As per his analysis of the concept of a perceivable object, an analysis very much in tune with the common sense conception of a perceivable object, any perceivable x can be perceived at a particular

place S if and only if it satisfies two sets of conditions. Firstly, (a) it must be, or exist, at S. We cannot perceive anything at any place if it is not there. We cannot perceive a jar at a place where there is no jar. To say that I see a jar at that place is to say that there is a jar there. This, condition (a), I would call the existential condition (EC). Secondly, a set of conditions other than EC must also be satisfied by x. For example, (b) there must be present a perceiver who is motivated (*pravṛtta*) and not indifferent, is properly, and not too distantly, located in relation to x, has healthy, and not defective eyes, has adequate time at his disposal, is provided with sufficient light in the place, etc., to make possible the perception of x by him if it is there. I would call (b) the *other necessary conditions* (ONC) of perception, because they are necessary but different form EC. Conditions (a) and (b) together constitute the sufficient conditions (SC) of perception, though each one of them is necessary. This means that if, in respect of the perception of x at s, both (a) and (b) conditions, EC and ONC's, are satisfied, x would be necessarily perceived. This is, in fact, DK's definition of a perceivable object. Symbolizing 'x exists at s' as 'Ex', 'all other necessary conditions for the perception of x at s are satisfied' as 'Ox', 'x is necessarily perceived' as 'Px', it can be said that, for DK,

DI x is perceivable = df. $(x)\ [(Ex.\ Ox) \supset Px]$

The above definition of a perceivable thing makes clearly visible the structure of our common-sense concept of a perceivable object. It is to be noted that it does not say that x is always perceived when it exists. Rather, it says that if it exists and satisfies all other conditions necessary for its perception, it would surely be perceived. Since the two, EC and ONC's, are the only conditions which together are sufficient for its perception, if both are satisfied by x, x is perceived. Since each one of the two is necessary for its perception, both are necessary. This means that EC and the totality of ONC's are both sufficient as well as necessary for its perception. If they are satisfied, x is perceived, and if x is perceived, they are satisfied by it. We can say, therefore, that it is perceived if and only if both are satisfied. Since, when it is perceived both are satisfied, when it is not perceived, then either EC, or some one of ONC's, must not have been satisfied. Thus, its non-perception would be a sign either of its not satisfying EC, the existential condition, that is, of its non-existence, or of its not satisfying the totality of the other necessary conditions of its perception. Therefore, if it is known that it satisfies the latter, and still is not perceived, it would logically follow that it does not satisfy the existential condition, which is the same thing as saying that it does not exist. Its non-perception would thus be the logical mark of,

or would prove, its non-existence only when it is a perceivable object satisfying only the totality of the ONC's and not the EC, of its perception.

3. Formulation of Non-cognition as Logical Reason (*Anupalabdhi Hetu*)

DK puts what has been said above in a technical and concise manner. He says that non-perception of an object is a *hetu* for inferring its non-existence if and only if it is an object which is fit to be, or capable of being perceived (*upalabdhilakṣaṇaprāpta* [ULP]) but is still not perceived. It would be ULP, an object fit to be perceived, if it satisfies the totality of all other (that is, conditions other than the existential condition) necessary conditions (ONC's) for its cognition (*upalambhapratyayāntarasākalyam*) and has a distinctive nature (*svabhāva viśeṣa*). It would have a distinctive nature if its nature is such that, if it exists and all other necessary conditions for its perception are satisfied, it is necessarily perceived,[1] that is, it is a perceivable object, symbolically already stated as D1: (x) [(Ex. ox) ⊃ Px].

DK's doctrine of *anupalabdhi hetu* inference in *sāvarthānumāna* form, (AHIS), the SA inference whose *hetu* is an *anupalabdhi hetu*, or whose *hetu vākya* an *anupalabdhi hetu vākya*, can be schematically presented as follows:

AHIS

There is no jar at the spot s
because
(1) No jar is perceived at s, (2) all other necessary conditions for the perception of a jar at s, if it were there, are satisfied, and (3) a jar is such a thing which is perceived at s if it exists at s and all other necessary conditions for its perception there are satisfied.

[1]*Tatrānupalabdhiryathā—Na pradeṣaviśeṣ kvacid ghatah, upalabdhilakṣaṇaprāptasyānupalabdhar iti.*

SNS, NB, p. 117:12.

Of the three types of logical reasons, non-perception is like 'There is no jar at that particular place because, in spite of its being an object fit to have been perceived, it is not being perceived.'

Upalabdhilakṣaṇaprāptarupalambha–pratyayāntarasākalyam svabhāvaviśeṣaśca

Ibid., p. 121:13.

An object's being fit to be perceived means that the totality of other conditions (i.e. conditions other than its existence) necessary for its perception are satisfied and it has a distinctive nature.

Yah svabhāvah satsvanyeṣūpalambhapratyayeṣu sana pratykṣa eva bhavati sa svabhāvaviśeṣah.

Ibid., p. 122,14.

For a thing to have such a nature that, if it exists and all other necessary conditions for its perception are satisfied, it will necessarily be perceived, is to have a distinctive nature.

Symbolizing 'There is a jar at the spot s' as Ex, 'A jar is perceived at s' as Px, 'All other necessary conditions for the perception of a jar at s, if it were there, are satisfied' as Ox, the above AHIS would be,

$\sim$Ex
because
$\sim$Px. Ox. [(Ex. Ox) ⊃ Px].

That this AHIS is a valid deductive inference, and any inference in this form would be valid, is clear from the derivation of the conclusion from the conjunctive premise given below:

1. $\sim$Px. Ox. [(Ex. Ox) ⊃ Px] / ∴ $\sim$Ex
2. $\sim$Px 1, simp.
3. Ox 1, simp.
4. (Ex. Ox) ⊃ Px 1, simp.
5. $\sim$(Ex. Ox) 2, 4, MT
6. $\sim$Ex. v $\sim$Ox 5, De M
7. $\sim$Ex 3, 6, DS

Even without the derivation, the deductive character and formal validity of the AHIS can be proved by showing the analyticity of [$\sim$Px. Ox. {(Ex. Ox) ⊃ Px}] ⊃ $\sim$Ex, the hypothetical proposition constructed by making the premise its antecedent and the conclusion its consequent. This can be done by proving that it is not possible to assign the truth-value 'T' to the antecedent and the truth-value 'F' to the consequent. Any student of elementary logic can prove it by assigning 'F' to the consequent, and consistently assigning the appropriate truth-values, 'T' or 'F', to the constituents of the antecedent, of

[$\sim$ Px. Ox. {(Ex. Ox) ⊃ Px}] ⊃ $\sim$Ex.

He can proceed as follows.

The above conditional would be false only if it is possible to consistently assign F to the consequent $\sim$Ex and T to the conjunctive antecedent. All the three conjuncts of the latter have to be true to make it true. Therefore he would have to assign to,

$\sim$Ex	F
$\sim$Px	T
Ox	T
Ex	T (because $\sim$Ex has to be assigned F)
Px	F (because $\sim$Px has to be assigned T)

This is the only possible consistent assignment of T's and F's to the constituents. But with this assignment, one conjunct of the antecedent '(Ex. Ox) ⊃ Px' becomes false and therefore the antecedent itself becomes false. Therefore, since both of its antecedent and consequent have to be false, the conditional has to be true, that is, it cannot be false, and therefore is analytic, and the AHIS inference,

∼Ex
because
∼Px. Ox. [(Ex. Ox) ⊃ Px]

has to be accepted as a valid deductive inference.

To be brief, DK asserts in his AH doctrine that non-perception of x implies non-existence of x, that is, (x) [∼Px ⊃ ∼Ex], if all ONC's of x's perception are satisfied and x is a perceivable object, that is, (x) [Ox {(Ex. Ox) ⊃ Px}].

4. Analyticity of *Anupalabdhi Hetu*

Before I take up another aspect, DK's AH doctrine, I would like to mention that his method of explaining its working weakens his claim that the *hetu* in any inference, SA or PA, must have the three features, that is, its (a) presence in the *pakṣa*, (b) presence only in a *sapakṣa*, and (c) presence never in a *vipakṣa*. We have seen that (b) and (c) are equivalent. Therefore, at least (a) and (b) must be true, according to him, of every *hetu*. But as shown in the preceding discussion, in an inference using AH only (a) is really required. The way DK defines some of the constituent notions of an inference using AH enables its *pakṣa vākya*, the feature (a), alone of AH to yield the conclusion in an analytical manner. Thereby it makes an AH inference deductive and therefore devoid of the potentiality of yielding any new knowledge (*anadhigatārtha bodhaka*),

'∼Px. [Ox. {(Ex. Ox) ⊃ Px}]', the premise from which '∼Ex', the conclusion, is deduced, is the *pakṣa vākya*, only one part of the full-fledged three-membered *hetu vākya* and not the complete *hetu vākya*. The *hetu* for inferring '∼Ex', the non-existence of a jar at s, is '∼Px. [Ox. {(Ex. Ox} ⊃ Px]', the jar's being not perceived at s and being ULP (*upalabdhilakṣaṇa prāpta*), and not simply its not being perceived at s. The first conjunct of the symbolized version refers to its not being perceived at s and the second within the large square brackets to its being ULP (*upalabdhilakṣaṇaprāpta*). The full statement of the three-featured *hetu* would be '(a) x is not perceived at s and is ULP (*upalabndhilakṣaṇaprāpta*), (b) whatever is not perceived at s and is ULP (*upalabdhilakṣaṇaprāpta*) does not exist at s,

and (c) whatever exists at s is either perceived at s, or is not ULP (*upalabdhilakṣaṇaprāpta*)'. Since (b) and (c) are equivalent, we may drop (c). But (a) and (b) would be required to make the inference conform to DK's form of SA or of any *anumāna*. The full *hetu vākya* containing (a) and (b) may not be expressly used in SA but that does not matter because its implicit use has to to be assumed. Rather, DK and even other Indian logicians would say that, in principle, or in point of logic, its use is necessary in every inference. Therefore, both (a) and (b) of the *hetu vākya* are, for DK, necessary for yielding the conclusion '~Ex'. But our derivation has shown that it analytically follows from (1) alone of the steps of the derivation given in Chapter 5.3, the requirement that the *hetu* must be present in the *pakṣa*, that is, only from part (a) of the full *hetu vākya*. The *pakṣa* here is the spot s which has the *hetu*, the not-perceived and ULP (*upalabdhilakṣaṇaprāpta*) jar. Being not perceived and being ULP (*upalabdhilakṣaṇa prāpta*), the two properties together of the imagined or hypothesized jar, constitute the *hetu* for inferring its non-existence. Rather, for anything, its non-perception and being ULP (*upalabdhilakṣaṇaprāpta*), together work as the AH for its non-existence. None of the two properties can singly do that.

But the two properties together make so strong a *hetu*, rather a definitional or analytical *hetu*, that even without part (b) of the *hetu vākya*, that is, without the use of a *vyāpti* asserting the relation of universal concomitance between the *hetu* and the *sādhya*, the *pakṣa vākya*, the part (a), alone of the *hetu vākya*, analytically yields, or entails, the conclusion. This means that of the three features of the *hetu* only one, that is, its presence in the *pakṣa*, alone is needed to make an AH inference valid. If this is so, DK would have to concede that the three-featured *hetu*, *trirūpalinga*, is not indispensable for every inference, SA or PA. This would not be an ordinary concession because it would result in his giving up the core component of his theory of inference.

Since the AH inference is deductive, or rather analytic, because the premise analytically yields its conclusion, it means that the latter does not contain anything not already contained in the premise, and therefore that AH cannot give any new knowledge, any *samyak jñāna*, because the latter has to be a new cognition and uncontradicted by experience. From all this, it would follow that either DK cannot call AH inference a *pramāṇa*, or, that he has to modify his definition of *pramāṇa*. To choose either one of the two alternatives would amount to his drastically changing not only his logic but also his epistemology.

Of the conditions necessary for the perception of an object in the working of an AH, only the conditions other than its existence are said to be

fulfilled. The remaining condition, the existence of the object, naturally, must not be fulfilled. If it is, then, since the other necessary conditions have already been said to have been fulfilled, the object would be perceived, that is, would not remain unperceived. This means that, then, its non-perception, which is the *hetu* for inferring its non-existence, would not be possible. But non-perception must be possible, otherwise there would be no *anupalabdhi hetu*-involving inference. Moreover, in an inference using *anupalabdhi hetu*, the non-existence of an object is the *anumeya*, the thing to be inferred from its non-perception. For this reason too, the object must not exist at the place where its non-existence is to be inferred. But the other necessary conditions must be fulfilled because even the absence of a single one of them would make the inference invalid or doubtful. For example, when there is not enough light in a room, if one does not perceive a jar there, and concludes that there is no jar, a dissenter may say that his inference is defective because absence of adequate light did not let him rightly perceive what was there, and therefore there might be a jar which he could not see. And this he can say even if there is really no jar. That is, the inference that there is no jar there can at least be called uncertain or doubtful, that is, undependable. Therefore it would not be a piece of *samyak jñāna*, that is, of right knowledge, fit to motivate one to behave in respect of the jar, as suggested by the inference, for example, to abjure moving towards it for taking some water from it in order to quench his thirst. The importance of other necessary conditions (ONC's), therefore, cannot be denied when one is adumbrating, or even examining, a theory which permits the inferring of non-existence of an object from its non-perception.

The question which is raised at this point is that of ascertaining the satisfaction of the ONC's relevant to the non-perception of an object: How to know, or, be sure that, when I do not perceive a jar at the spot s, all the ONC's for its perception there, had it been there, are satisfied? To answer this question DU introduces the concept of co-cognizability (*ekajñānasansargītva*). Two objects are co-cognizable (*ekajñānasansargī*) when they are cognizable in the same act, or, mode, of cognition, or by the same sense organ. The spot s and the jar, the absence of which is perceived at s, are co-cognizable, or co-perceivable, since both are cognizable by visual perception, by the same sense organ, the eye. The same act of seeing, which cognizes the empty spot s without any jar, would also have cognized the jar if it were there.[2] The ONC's for the perception of s and for that of the jar, if it were at s, are the same s is

[2]SNS, NBT, p. 119.

perceived. Therefore, the ONC's for the perception of s are satisfied because their satisfaction is a necessary condition of its perception. Since they are also the ONC's for the perception of the jar had it been there, we can say that the ONC's for the latter are also satisfied. In the context of AH, DU maintains the general thesis that when any object x is not perceived in any locus y, when y is perceived, the satisfaction of y's ONC's is the proof of the satisfaction of x's ONC's. Therefore, we do not have to make any extra effort to ascertain the satisfaction of x's ONC's.

That the ONC's for the perception of y are satisfied is obvious because, if they were not satisfied, y would not have been perceived, and y has been perceived. That the ONC's for x's perception, therefore, have been satisfied is also obvious, but still x has not been perceived. These two facts make it equally obvious that EC, the remaining condition for the perception of x has not been satisfied because had it been satisfied too, x would have been perceived. To say that EC, the existential condition, of the perception of x has not been satisfied is to say that x does not exist. This is what DK maintains when he says that if x is a perceivable object and its ONC's are satisfied, then, if it is not perceived, it does not exist. Non-existence of x thus deductively follows from its non-perception when x is a perceivable object with the totality of ONC's for its perception having been satisfied.

One implication of the above view is that the non-perception of an object x cannot be the *hetu* for inferring its absence in a locus y when x is not cognizable by the same sense organ which cognizes y. For example, when I look at the water in a sea and have all the ONC's for the visual perception of the water satisfied, I get no cognition of the sweetness of the sea-water. But I cannot infer from this non-cognition of the sea-water's sweetness that the sea-water is not sweet. DU would say that I cannot because the colour of the water and the taste of the water are not co-cognizable (*ekajñānasansargī*). The former is cognizable by the sense of sight and the latter by that of taste. This is the reason for the totality of the ONC's for cognizing the one not being the same as that of the other. Of the place s occupied by a jar and the jar, each one is an *ekajñānasansargī* of the other, that is, each one is cognizable by the same sense organ by which the other is cognizable. That is why (a) their ONC's are one and the same set of conditions, (b) seeing s is the same as seeing the absence of the jar at s, and (c) seeing the absence of the jar at s is a logical reason for inferring the absence, or non-existence, of the jar at s. All this not being true of the sweetness of the sea-water and of the sea-water's look, not finding the sea-water sweet by looking at it is not a logical reason, an AH, for inferring the absence of sweetness in it, even though there is no sweetness in it.

The concept of co-cognizability is therefore very important because it rules out *ab initio* many misuses of AH. But it also makes AH a deductive, and not an inductive, reason. The look of a thing may be an inductive reason for making an inference about its taste. What DU rules out is the possibility of the non-perception of an x being a deductive reason for its non-existence in a y when x and y are not co-cognizable. He does it because, as seen in the preceding discussion, and as will be discussed in the next chapter, as per DK's and DU's characterization, AH is a deductive reason. By calling it a deductive reason I mean that any inference in which non-perception of a thing functions, as per DK's and DU's specification, as a *hetu* for inferring its non-existence, in the logical frame of that inference it entails the non-existence of that thing. It does not merely suggest, as an inductive reason does, that it is highly probable, or just probable, that the thing does not exist. Rather it shows that if the premise is true, the thing concerned *must be* non-existent when it is not *perceived to* be existent.

5. *Anupalabdhi Hetu* as Doubt-remover

To say that any empty spot s and any jar, x, the absence of which is perceived at s, are co-cognizable (*ekajñānasansargī*) in the sense that the same act of perception which cognizes s would also have cognized x had it been at s, means that the same act of perception which cognizes s as having no x also cognizes the non-existence of x at s. To perceive s without x, as x-less, is to perceive that no x exists at s. DK says that the non-perception of a perceivable thing, like a jar, is not possible if (a) the thing is there, and (b) all the other conditions of its perception are fulfilled. Therefore, in such a case its non-perception would be a cognition of its non-existence. To cognize the spot without the jar would amount to cognizing that there is no jar there. To have this sort of cognition of the jar's non-existence at that place, DK says, no inference, and therefore no *anupalabdhi hetu*, or *hetu*, is needed. But this cognition of non-existence of the jar may not be dependable, or definitive, and therefore it would not be fit to motivate one to behave in the manner in which he should when he is sure of there being no jar at that place. That is, the use of inference using *anupalabdhi hetu* (that is, *dṛśyānupalabdhi*), is needed not to produce the cognition of non-existence, but to make the cognition, already produced by non-perception, definitive, or free from doubt and uncertainty.

The cognition of the non-existence of an object obtained from its non-perception may not always be definitive or unerring because of the

possibility that non-perception of an object may occur even though the object exists at the spot where it is not perceived to be present. This happens when the object is by its very nature unperceivable and therefore is not perceived even when and where it exists and all other necessary conditions of normal perception, that is, of the perception of a perceivable object, are fulfilled. To say of any x that it is perceivable is to say, as we have seen, that

$$(x)\ [(Ex.\ Ox) \supset Px].$$

Therefore, to say of any y that it is always unperceivable (*adṛśya*) is to say that no y is perceived even when and where it exists and all other conditions of normal perception are fulfilled. Therefore, if y is unperceivable, then from its non-perception its non-existence cannot be obtained in any manner. And, if it is, it would not be *samyak jñāna* and therefore not fit to be acted upon, or to be a means of attaining any object of any desire (*puruṣārthasiddhi*).

What DK and DU want to highlight is that, since in the case of an unperceivable object, the non-perception of its existence (or the perception of its non-existence) is not an indubitable proof of its non-existence, even the cognition of the non-existence of any object would be suspect of being erroneous, or of being undependable as a cognition, if it is not ascertained that the object concerned is perceivable. Only the non-perception of a perceivable x (*dṛśyānupalabdhi*) gives the veridical cognition of x's non-existence, and non-perception of an unperceivable y (*adṛśyānupalabdhi*) does not.

When one gets the cognition of an object's non-existence at s when he does not perceive it at s, he does not need to use any inference involving *anupalabdhi hetu* to get the cognition of the object's non-existence because he has already got that cognition. But this cognition would remain doubtful because the object concerned may be unperceivable (*adṛśya*). It cannot be treated as a piece of knowledge (*samyak jñāna*) uncontradictable by experience (*avisamvādaka*), and therefore not as fit to be acted upon, fit to motivate the cognizer to regulate his behaviour in accordance with the cognition that the object concerned is not there. To confirm it, to test its veracity, or to remove the element of possible doubt or uncertainty infecting it, he needs to use the technique of *anupalabdhi hetu*, to infer by using this mode of inference, that the object does not exist where it has been cognized to be non-existent.

Non-cognition of any x is an *anupalabdhi hetu* (AH) if and only if x is ULP (*upalabdhilakṣaṇaprāpta*); that is, as has been already said, when all other conditions of its perception are fulfilled and its nature is such that,

if it exists and all other conditions of its perception are fulfilled, it would be perceived. As already explained, non-cognition of x is AH = df (x) [Ox. {(Ex. Ox) ⊃ Px}. ~Px]. When this test would be used on the non-cognition of any x, it would be ascertained in the process whether or not x is perceivable, that is, has such a nature that (x) [(Ex. Ox) ⊃ Px]. That is, whether or not its nature is such that if it exists and other conditions for its perception are fulfilled, it would be necessarily perceived. If it is perceivable, and other conditions are fulfilled, its non-perception would be an indubitable sign or *hetu* for its non-existence. If it is non-perceivable (*adṛśya*), that is, if it is not the case that (x) [(Ex. Ox) ⊃ Px], then its non-perception would not be a sign of its non-existence.[3]

When one concludes in a valid way, by correctly using AH, that there is no jar at that place, then he acquires the logical or epistemic authority to behave (*abhāva vyavahāra*) at that place as required by, or concordant with his cognition of the non-existence of a jar there, the cognition now made free from all doubts by his AH inference (though not generated by it because the cognition of non-existence was generated by the cognition of the jarless spot).

DK calls *anupalabdhi hetu abhāva-vyavahāra pravarbttanī*,[4] the motive force behind such behaviour as in keeping with the cognition of non-existence. Inference involving non-cognition of an object as the *hetu* according to him, by confirming, or certifying, as indubitable, the cognition of the object's non-existence, works as a force which motivates, or inclines, the inferer to do what is in accordance with this cognition. What he may then do is, (a) to just have the clear judgement that there is no jar there, or, (b) to express verbally that thee is no jar there, or, (c) to feel

[3]*Pratipattuh pratyakṣo ghatādirarthah, tasya nivṛtīranupalabdhih. tadabhāvasvabhāveti yāvat. Ataevābhāvo na sādhyah svabhāvānupalabdheh siddhatvāt.*

SNS, NBT, pp. 142–43.

A jar, etc. is an object of a perceiver's perception. The non-perception of that perceivable object means its non-existence. Therefore, the non-existence (of an object like a jar) is not established, i.e. inferred, by using (the object's) non-perception as its logical mark because it is already established by the object's non-perception.

Anena ca dṛśyānuplabdhih pratyakṣaghata—nivrittisvabhāvoktā. Sā ca siddhā. Tena na ghatābhāvah sādhyah, api tu abhāvavyavahāra ityuktam.

Ibid., p. 146.

It is indicated (by what has been said) that it is the nature of the non-perception (of a jar) to negate the existence of the perceivable jar because that (i.e. the latter's non-existence) is shown (by the perception of the place where the jar is non-existent). Therefore, it is said that what is attained (by the use of non-perception of a jar as a *hetu*) is not the cognition of the non-existence of a jar but the propriety of the behaviour (in accordance with the judgement that there is no jar there).

[4]SNS, NB, p. 142.28.

inclined to move freely around there without any suspicion of a jar being there.[5] What he actually does is up to him.

DU concludes that non-cognition of a perceivable object (*dṛśyānupalabdhi*) makes practicable, or usable in action, that cognition of the non-existence of the object, which has been already produced by perception, and is not a new, or hitherto unproduced, cognition. Therefore, the cognition of the non-existence of a jar produced by the perception of the place, reinforced by the non-perception of a jar there, is said to have been made motivative (a motivational agent) by the use of inference using non-cognition as a logical reason.[6]

6. Removal of Doubt not so Important an Issue in Inference for Oneself (*Svārthānumāna*)

In the case of a perceiver's attempt to convince another person of a jar's non-existence at a certain spot which has been perceived to have no jar, the use of an inference in the form of *parārthānumāna* (PA) may really be sometimes necessary. But the use of a *svārthānumāna* (SA) by the perceiver to make his own perception of the jar's non-existence dependable enough to guide his behaviour, in normal cases, does not seem to be called for. Recourse to the use of *anupalabdhi hetu*-using inference is said to be necessary to avoid the error of considering an unperceivable object non-existing on the ground of its non-perception, when the fact is that even while existing there it would remain unperceived. In normal cases, the perceiver would know that the object concerned is perceivable, as he would in the case of a jar's non-existence cognized in the perception of the jar-less spot. Therefore, there would be no need for using SA to make the perception of the jar's non-existence more dependable, or confirmed.

When the perceiver knows that the object cognized to be non-existent is unperceivable, he would not consider it non-existent and then again would not need SA to make the cognition of non-existence dependable, or to reject it, since he has none. Only when he is not sure whether the

[5]*Abhāvasya vyavahārah 'nāsti' ityevamākāram jñānam, śabdścaivamākārah, nihśankam gamanāgamanalakṣanā ca pravṛttih kāyiko-abhāvavyvahārah ghatābhāve hi jñāte nihśankam gantum āgantum ca pravarttate.*

SNS, NBT, p. 149.

Appropriate use (of the inferential confirmation) of non-existence is to hold in an authentic manner that no jar is there, to give verbal expression to it (i.e. to assert that no jar is there), or to feel motivated to physically move in the place without any doubt (of there being a jar), because after definitively knowing the non-existence of a jar at a place one starts moving about there without any hesitation.

[6]Ibid., p. 150.

object is perceivable, or unperceivable, he may need an inference to check whether or not his cognition of its non-existence is dependable. But in such a case, he would need to know whether or not the object is perceivable more than to check whether or not his cognition of non-existence is supportable by a valid inference. And, to know the former, he only needs, in DK's scheme of things, DK's definition of the perceivable. He would not need any inference because DK does not say that it can be known by any sort of inference. He only defines it as that which, if it exists and all the other conditions for its perception are fulfilled, it would be perceived. Therefore, it seems, neither DK, nor DU, has been able to make a forceful case for the use of inference to make the perception of non-existence more dependable than it may otherwise be, for being fittingly acted upon.

Common sense shows that it may look all right to hold that a cognition obtained by perception may be made more dependable by being confirmed by an appropriate inference, and vice versa. But since DK, like all other Buddhist logicians, holds the theory of *pramāṇa vyavasthā*, the theory that one *pramāṇa* cannot operate on the same theme on which another can, or has operated, inference cannot operate on what perception has operated. That is, since, according to DK and DU, the non-existence of a jar at s where there is no jar, is known by the perception of s as having no jar, this cognition cannot be had by inference. It cannot even be reinforced, or confirmed, by inference because doing that too would amount to yielding the same cognition in a more strengthened form. This means that DK's adherence to the theory of *pramāṇa vyavasthā* has to be toned down, or a little loosened, to accommodate his recipe of making the cognition of non-existence more dependable by letting inference do some work on it.

7. Restrictions on the Use of *Anupalabdhi Hetu*

DK imposes two restrictions on the use of AH to infer the non-existence of an object. The first is that only a past or present non-cognition of an object can be used as AH. The past non-cognition of an object, if its recollection has not been lost, can be used to infer the object's past non-existence, and that of a present object to infer its present non-existence. A non-cognition of a future object cannot yield any definite conclusion about the non-existence of that object. The very nature of such a non-cognition is indefinite and uncertain. It cannot lead to a certain conclusion. Therefore, DK says, the non-cognition of anything future cannot, or should not, be used to infer its non-existence.[7] That is, we can say 'He

[7]SNS, NB, 142:28, 152:29; SNS, NBT, pp. 142–52.

did not eat any sweet with his last night's dinner because he was not seen eating any' or 'He is not eating any sweet at the moment because he is not seen eating any'. But we cannot say what he would not eat at lunch tomorrow because our non-cognition of what he would not, or would, is not in any dependable way definite. A valid judgement of the non-existence only of a past, or of a present, object, therefore, can warrant a behaviour cogruent with the right knowledge of non-existence.

The second restriction is that the non-cognition only of a perceivable or cognizable object can be an AH for inferring its non-existence, or for inferring the non-existence of another object related to it in some specific way (as would be shown, in the next section), to be true of some of the types of non-cognition or non-perception (*dṛśyānupalabdhi*). The non-cognition of an object, which is not perceivable or cognizable (*adṛśya*) on account of its being located too distantly in space, or in time, or because of its very nature, can generate only doubt or uncertainty as to whether or not it exists. It cannot therefore be a logical reason for inferring a definite conclusion to the effect that it does not exist. Such an object may be there even when it is not perceived. The nature of the non-cognition of such an object is to indicate that the object is beyond the ken of perception and inference,[8] that is, beyond the boundary of knowledge, or is unknowable.[9]

From the fact that something is cognized to exist by perception, or by inference, it follows that it exists because, if it does not exist, it can neither be perceived, nor inferred, to exist. But from the mere fact that it is not cognized by either one of them, it does not follow that it does not exist.[10]

DU's elaboration of the above is that, by its very nature, the non-cognition of such an uncognizable object (*adṛśyānupalabdhi*) involves neither the use of perception, nor that of inference. It is the absence of all knowledge and its object is unreachable by perception and inference. Therefore, as perception and inference are the only two forms of knowledge, its object is unknowable. From the absence of a cause can be

[8]*Viprakṛṣṭaviṣayā punaranupalabdhih pratyakṣānumānanivṛttilakṣaṇā sanśayahetvh.*
SNS, NB, p. 183.47.
The non-cognition, whose object is non-cognizable, is a reason for being sceptical about the existence, or non-existence, of that object because of the implication that the object is inaccessible to both perception and inference.

[9]*Na jñānajñeyasvabhāveti yāvat.*
SNS, NBT, p. 183. (It is) that whose nature makes it unknowable.

[10]*Pramāṇanivṛttāvapyarthābhāvāsiddheriti*
SNS, NB, p. 184.48.
Non-comprehension of an object by forms of knowledge does not prove the object's non-existence.

inferred the absence of its effect, and from the absence of a genus, the absence of any species of it. But knowledge (*pramāṇa*) is neither a cause, nor a genus, of its object. Therefore, from the absence of the knowledge of an object, which the non-cognition of an object, incomprehensible by perception and inference, is, the absence, or non-existence, of the object cannot be inferred. The non-cognition of an uncognizable object, therefore, is a logical reason or *hetu* for scepticism, and not for any definite inference, about its non-existence.[11]

The restriction that AH should be used to infer the non-existence of an object from its non-perception only if the object is perceivable and the other necessary conditions for its perception are satisfied is a sound logical principle as well as a commonsensical one. So is its implication that it cannot be used to infer the non-existence of a thing from its non-perception if the thing is unperceivable. The unperceivable (*adṛśya*), for DK and DU, as has been shown, is unknowable because it is knowable neither by perception nor by inference. DK's doctrine that AH can be used only to infer the non-existence of the perceivable and never that of the unknowable does not imply that there is something unperceivable. It only implies that if there is something unknowable, then its non-existence cannot be inferred from its non-perception or non-cognition. Therefore, DK could have stopped here with stating the doctrine in this way without saying anything about whether or not there is anything unknowable. But in another context, while discussing the nature of inferential fallacies, he offers omniscience as an example of an unknowable thing.[12] This means that for DK there exists at least one thing which is unknowable and therefore its non-existence cannot be inferred from its non-cognition.

It is obvious that the reality of anything unknowable cannot be proved because that would amount to making it knowable. And, since it is unknowable, it cannot be even talked about because we cannot say anything about it. We cannot even say that its non-existence cannot be inferred from its non-perception. To say that would mean that we know that its non-existence cannot be inferred from its non-perception and then it would cease to be unknowable. Therefore, I said above that DK could very well have stopped with restricting the application of his doctrine of AH to the perceivable without saying that there was anything unknowable, since his logic did not require him to admit the reality of anything unknowable.

[11]SNS, NBT, p. 184.
[12]SNS, NB & NBT, p. 295.

SIX

Forms of Inference Using Non-cognition (Anupalabdhi) *as Logical Reason* (*Hetu*)

1. *Svabhāvānupalabdhi* (A Thing's Non-perception as the Logical Reason for its Non-existence)

The central feature of DK's conception of *Anupalabdhi hetu* inference (AHI), the inference in which the non-perception of a thing functions as the logical reason for inferring its non-existence, is, as we have seen, that the thing must be ULP (*upalabdhilakṣaṇaprāpta*). Any x is ULP if the auxiliary conditions, that is, the conditions necessary for its perception, but other than its existence, are satisfied (Ox) and by its very nature x is perceivable. It is by its very nature perceivable if it is the case that, if it exists (Ex) and other necessary conditions for its perception are satisfied (Ox), then it is necessarily perceived (Px). Using the symbolism adopted in the last chapter and mentioned above, we can say that,

$$(x)\ (x \text{ is ULP}) = \text{df.}\ (x)\ [Ox.\ \{(Ex.\ Ox) \supset Px\}].$$

To recapitulate, in terms of these ideas, a commonly used form of inference of the AHI type, in its *Svārthānumāna* form (AHIS), which is his first form of AHI, can be illustrated by:

There is no x at s
because
No x is perceived at s and x is ULP.

In our symbolism it would be,

$\sim$Ex
because
(x) [$\sim$Px. Ox. {(Ex. Ox) $\supset$ Px}].

It has been shown that in this inference, the conclusion is analytically derivable from the premise without the assistance of any other idea or proposition, without even needing the use of a three-featured *hetu*. DK describes this as an inference based on *dṛśyānupalabdhi* (visual non-cognition). The object whose non-existence is inferred is perceivable (*dṛśya*) because had it been there, it would have been perceived.

There are, according to him, ten other forms of AHI's, so that there are a total of eleven types of AHI's. The remaining ten types are essentially, or substantially, non-different from or reducible to the first, given above. They differ from it only in their verbal form or formulation, and are considered to be different only because of this verbal difference. In all of them, the non-existence of an object which is ULP, is inferred. For DK, the non-perception of a non-perceivable (*adṛśya*) object, cannot function as an AH for inferring its non-existence because the object may be there even when it is not perceived.

In the first form of AHI, already illustrated, in a schematic form, the non-perception of a thing's (own) existence (*sva* + *bhāva* + *anupalabdhi*) is the logical reason for inferring the thing's (own) non-existence. Therefore, he calls it *svabhāvānupalabdhi* (non-perception of own existence). To take a concrete example, it can be illustrated by,

There is no jar here
because

(a) No jar is perceived here, even though (b) all the auxiliary conditions for the perception of a jar here are satisfied (and a jar is a perceivable object).
The (b) part of the premise simply asserts that a jar is an ULP (*upalabdhilakṣaṇaprāpta*) object. The idea behind this inference and every other AHI is that, since all the auxiliary conditions for the perception of the object are fulfilled, and it is a perceivable object, it must have been perceived had it been there. But it is not perceived to be there. Therefore, it does not exist there. This is the reasoning which backs the conclusion, 'There is no jar here', which can, as had been demonstrated, be analytically deduced from the premise. It is this form of AHI which has been discussed in detail earlier.

2. *Kāryānupalabdhi* (Non-perception of an Effect as the Logical Reason for the Non-existence of its Cause)

The second form of AHI is that in which the non-perception of the effect is the *hetu* for inferring the non-existence of its cause having the unobstructed capability to produce it. The reasoning on which this is based is that, had the cause that had an unobstructed capability to produce its effect been there, the cause must have produced the effect, and then the effect must have been present where it is now absent, that is, non-perceived. DK calls this form of AHI *Kāryānupalabdhi* (*kārya* + *anupalabdhi*) that is, inference whose *hetu* is the non-perception (*anupalabdhi*) of the effect (*kārya*).

When the interior of a house and therefore what is contained therein are not visible, if one does not see any smoke on the thatched roof of the house coming from its interior, he infers that there is no cause, that is, fire, with unobstructed capability, in the house, to produce smoke, its effect. Had it been there, smoke would have been produced and visible on the roof. But it is not. Therefore, there is no such cause in the house. The inference can be formulated as follows:

> There is no cause here with unobstructed
> capability to produce smoke
> because
> There is no smoke here.

Symbolizing 'There is no cause here with unobstructed capability to produce smoke' as ~Ecus, 'There is no smoke here' as ~Es, and 'If there is a cause of unobstructed capability to produce smoke, then there would be smoke', the definition of a cause of unobstructed capability to produce smoke, as Ecus ⊃ Es, the above inference can be symbolized as:

> ~Ecus
> because
> ~Es. (Ecus ⊃ Es).

It is obvious that '~Ecus' follows from '~Es. (Ecus ⊃ Es)' by Modus Tollens.

As DK frames this inference, it seems that he is holding that from the non-existence of the effect follows the non-existence of the cause with unobstructed capability to produce it. One may say therefore that it is not a genuine example of an AHI because in any AHI, the non-existence of something is inferred from the non-perception of something with the precondition that the object whose non-existence is inferred

must be ULP (*upalabdhilakṣaṇaprāpta*). It seems to me that, even while discussing the various kinds of AHI, DK always means to say that it is the non-perception of something, and not its non-existence, which is the *hetu*, and also that the object whose non-existence is inferred must be ULP (*upalabdhilakṣaṇaprāpta*). Only to ensure brevity, he formulates his examples in such a way that the non-existence of one thing entails that of another.

Let us arrange the above inference while giving it the explicit form of an AHI:

There is no cause here with unobstructed
capability to produce smoke (~Ecus)
because

No smoke is perceived here (~Ps) and smoke is ULP (*upalabdhilak-sanaprapta*) [Os. (Es. Os) ⊃ Ps].

Adding the definition of a cause of unobstructed capability to produce its effect 'Ecus ⊃ Es', and that of ULP (*upalabdhilakṣaṇaprāpta*) as per our symbolization, its symbolized form would be:

Ecus
because
~Ps. (Ecus ⊃ Es). [Os. {(Es. Os) ⊃ Ps}].

In this form too, the conclusion is analytically deducible from the premise, as is shown below:

1.	~Ps. (Ecus ⊃ Es). [Os. {(Es. Os) ⊃ Ps}] ∴ ~Ecus	
2.	~Ps	1 simp.
3.	Ecus ⊃ Es	1 simp.
4.	Os. [(Es. Os) ⊃ Ps]	1 simp.
5.	Os	4 simp.
6.	(Es. Os) ⊃ Ps	4 simp.
7.	~(Es. Os)	2, 6 MT
8.	~Es v ~Os	7 De M
9.	~Es	5, 8, DS
10.	~Ecus	3, 9, MT

What has been demonstrated here is true of all the other varieties of AHIs. In discussing the remaining, I shall state these as DK has done, without using an explicit *Anupalabdhi hetu* form and without any demonstration. The reader can very easily formulate any one of them in that

form and construct its demonstration, if he pleases. In other words, each one of the various forms of AHIs is a valid deductive inference, no matter whether we put it in a form in which the non-existence of something is deduced from the non-perception of something, or in a form in which the former is deduced from the non-existence of something, provided the general logical framework of AHI assumed by DK is observed.

A good reason exists for considering this form of inference of the non-existence of the cause from that of its effect as a case of *kāryānumāna* (see Chapter 8). In *kāryānumāna*, the presence of the cause is inferred from the presence of the effect, for example, when we infer, 'There is fire on the hill' from 'There is smoke on the hill', we do so because the presence of smoke is the *kārya hetu* for the presence of fire, for that kind of fire which has the unobstructed capability to produce smoke as its effect. In the context of *kāryānumana* also, DK holds that only a cause of unobstructed capability to produce the effect can produce its effect. When it is present, it would necessarily produce its effect, and where an effect is present, there must be a cause with unobstructed capability to have produced it because it would not have been otherwise produced. That is, the presence of such a cause implies its the presence of effect and the presence of an effect implies the presence of such a cause. Contrariwise, the absence of such a cause implies the absence of its effect, and the absence of the effect implies the absence of such a cause. Therefore, the inference, 'There is no fire (a cause capable of producing smoke)' from 'There is no smoke (the effect of such a cause)' can be said to be a case of *kāryānumāna*, an inference in which a *kārya*, an effect, is the *hetu*, for the simple reason that the presence of the effect implies the presence of the cause, and the absence of the effect, the absence of the cause. This means we do not need to describe it as a variety of *Anupalabdhi hetu* inference, or to admit *kāryānupalabdhi* as a kind of inference different from *kryānumāna*.

3. *Vyāpakānupalabdhi* (Non-perception of the Inclusive as the Logical Reason for the Non-existence of a Thing Included in it)

In the third form, the *hetu* denying something is the non-cognition of that in which the denied is included.

In it the non-existence of a thing included (*vyāpya*) in something else (*vyāpaka*) is inferred from that of the latter, that is, from the non-perception of that in which it is included. That is why it is called non-perception of the includer (*vyāpakānupalabdhi*).

Imagine, DK says, two contiguous spots of which one is thickly forested and the other is completely barren. An onlooker sees the trees in the forested part but is not able to discern whether any one of them is an *Aśoka* tree. He has, thus, no idea of there being or not being an *Aśoka* tree in the vicinity of the barren part of the land but he has the cognition of there being trees in the forested part and there being no tree in the barren part. Therefore, he assures himself of there being no *Aśoka* tree in the barren part by inferring that there is no *Aśoka* tree here because there is no tree here. His inference of:

> There is no *Aśoka* tree here
> because
> There is no tree here,

is an instance of AHI because the non-existence of an *Aśoka* tree (*vyāpya*) is inferred from the non-perception of the genus (*vyāpaka*) 'tree' there. The genus 'tree' includes the species '*Aśoka* tree' and therefore there cannot be an *Aśoka* tree where there is no tree.

The logical equivalence or identity of this kind of inference with the first, *Svabhāvānupalabdhi* is clear. The absence of an *Aśoka* tree is inferred to be true of the barren spot from perceiving no tree there. To see no tree there is to see no *Aśoka* tree as well there. Therefore, the inference of there being no *Aśoka* tree can as well be said to have been drawn from the non-perception of any *Aśoka* tree there, as is done in *Svabhāvānupalabdhi*. That the inferer is not able to perceive if any of the trees in the forested part is, or is not, an *Aśoka* tree, does not matter as far as the inference of there being no *Aśoka* tree on the barren part is concerned.

It is true, however, that what has been said here does not go against DK's conception of this form of AHI because he also holds that essentially each one of the remaining ten AHIs is equivalent to, or identical with *Svabhāvānupabdhi*.

But there seems to be another reason, and a stronger one, for not accepting this form of inference as an independent one. We shall see, when discussing DK's characterization of *Svabhāva hetu* inference (see Chapter 7), that we can infer, 'This is a tree' from 'This is an *Aśoka* tree' because being an *Aśoka* tree is an analytical logical reason (*Sabhāva hetu*) for being a tree and not to be a tree is not to be an *Aśoka* tree. 'If there is not tree, then there is no *Asoka* Tree' is equivalent to 'If there is an *Aśoka* tree, there is a tree', since the former is the transpositive of the latter. Therefore, this third form of DK's *Anupalabdhi hetu* inference, the *Vyāpakānupalabdhi*, is as a logical thing a case of *Svabhāva hetu* inference,

and therefore, like the second one, it too may not be called an independent form, or, a form of *Anupalabdhi hetu* inference.

4. *Svabhāvaviruddhopalabdhi* (Cognition of the Opposite of that Whose Non-existence is Inferred)

The fourth kind of AHI is that in which the non-existence of something, say, x, is inferred from the perception or cognition of something else, say, y, on the ground that the presence of x is incompatible with the presence of y. DK calls it *Svabhāvaviruddhopalabdhi* (cognition of the opposite of the denied) because the *hetu* here is the cognition of something which is opposed to what is denied. As an example, he gives the following:

> There is no sensation of cold here
> because
> There is fire here.

When a fire is burning at a far off place, one may see the fire because of the light emitted by it. But he may not feel the sensation caused by the fire, or a sensation similar to that felt by a person present there because it is burning at too far a place. Then knowing from before that the presence of fire at a place is incompatible with the presence of the sensation of cold there, he infers that at that place there is no sensation of cold.

Here the non-existence of something is not inferred from the non-perception, or non-existence of anything, but from a positive perception, the perception of the existence of something; a negative proposition, 'There is no sensation of cold', has been inferred from the positive proposition 'There is fire'. The reasoning behind the inference is as follows:

> There is no sensation of cold there
> because
> There is fire there;
> and
> The presence of fire at any place is incompatible
> with the presence of the sensation of cold at that place.

This inference, obviously, is not from the non-perception or non-existence of something but an application of the principle that if something is true, what is incompatible with it must be false, of something like the

law of contradiction. Therefore, it is not intelligible why DK calls it a variety of AHI.

It may be said that the notion of non-cognition or non-existence of something is present in this inference because of the second premise 'The presence of fire at any place is incompatible with the presence of the sensation of cold there', which is equivalent to 'Wherever there is fire, there is no sensation of cold'. Of course, it is to be assumed that by 'fire' there we mean fire producing enough of heat to stop the occurrence of any sensation of cold there. Here absence of the sensation of cold would be an effect of fire. Then the inference which DK has given as an example of *Svabhāvaviruddhopalabdhi* would have the form:

> There is no sensation of cold there
> because
> There is fire there
> and
> Wherever there is fire, there is no
> sensation of cold.

In this form, the inference becomes an example in DK's logic of *Kāryānumāna*, that is, of inferring an effect from its cause. Then again it would cease to be an independent form of inference, or a form of AHI.

5. *Viruddhakāryopalabdhi* (Cognition of an Incompatible Effect)

The fifth form which DK calls cognition of an incompatible effect (*viruddhakāryopalabdhi*) is very much like the fourth. Its *hetu* is the cognition of an effect, the cause of which is opposed to the existence of what is denied. His example is:

> There is no sensation of cold here
> because
> There is smoke here.

In this case, one infers the absence of the sensation of cold from the presence of smoke because the presence of smoke implies the presence of fire, smoke being the effect of fire, and the presence of fire implies the absence of the sensation of cold, which is denied in the conclusion.

In its full-fledged form the inference:
There is no sensation of cold here
because
There is smoke here;

would be,

(A) There is fire here
because
There is smoke here, and wherever there is smoke, there is fire.

(B) There is no sensation of cold here
because
There is fire here, and wherever there is fire there is no sensation of cold there.

It thus consists of two inferences, (A) and (B), of which (A) is the inference of cause from its effect, and (B) the inference of the effect from its cause. Therefore we can call it effect–cause inference, or causal inference, using it in a broader sense to denote both inference of a cause from its effect, and that of an effect from its cause. But there does not seem to be any reason for calling it AHI (*Anupalabdhi hetu inference*), as DK has done.

6. *Viruddhavyāptopalabdhi* (Cognition of Something Pervaded by the Opposite of that Whose Non-existence is Inferred)

The sixth form of AHI DK calls *Viruddhavyāptopalabdhi* (cognition of that which is pervaded by the opposite of the negated) because in this form of inference, the *hetu* is the cognition of that which is pervaded by, included in, or subordinate to, the opposite of what is denied in the conclusion. For example, if x is the denied, its opposite would be not-x and its *hetu* would be y which is pervaded by not – x.

A skeletal example of it would be:
A is not –x
because
A depends on y (which is pervaded by not – x).

A concrete example given by DK is:

The destruction of a produced object
is not inevitable
because
The destruction of a produced object depends on an external cause.

The reasoning backing this inference is that the destruction of a produced thing, say, a jar, would not be inevitable if, as the *Naiyāyika* holds, it is to be caused by an external agent, say, by being hit hard by someone with a heavy wooden implement. The wooden implement is an external agent because it is something external to the origination or constitution of the jar, something other than what is intrinsic to or contained in the being or nature of the jar. This means that the jar would not be destroyed when no external agent operates on it in some special way, say, by hitting it hard, and therefore that its destruction is not inevitable, as the *Naiyāyika* holds it to be. The corollary of this reasoning is that when a produced thing's destruction is not inevitable, the destruction of a thing which is unproduced or without any origin would more obviously be uninevitable.

For DK, and some other Buddhists, everything is by its nature momentary, nothing is eternal. Everything is destroyed in a moment and comes into being in the subsequent moment. This process of coming into being and going out of being and again coming into being which goes on endlessly is spontaneous or automatic, being a consequence of the very nature of things, and does not need the operation of any external cause for the destruction or creation of things.

DK's objective in using the above argument to illustrate this form of AHI is two fold. Firstly, he definitely wants to explain how it works. But, secondly, and more importantly, by using the particular token of this form of inference he wants to give a *reductio ad absurdum* argument against the position of the *Naiyāyika* that the destruction of a produced thing is not inevitable even though it requires the instrumentation of an external agent to cause it. Since the inference-form of the example is valid, as per DK's claim, its conclusion must be accepted by the *Naiyāyika* because it follows from a premise which he holds to be true. But the conclusion asserts that the destruction of a produced thing is not inevitable, a position the *Naiyāyika* does not accept. But he must accept it because it is the logical consequence of his own thesis—the premise of this AH argument—that a produced thing's destruction depends on some external cause. The *Naiyāyika* holds that the destruction of a produced thing is inevitable but that of a non-produced thing is not. This he cannot do along with holding, as he does, that the destruction of a produced thing needs the operation of an external cause.

The polemical aspect of DK's example discussed here may be relevant to the debate between Buddhists and *Naiyāyikas*, but not to the logical status of the inference-form it is meant to illustrate. Therefore, let us see whether or not it can be counted as illustrative of a form of AHI.

The destruction of a produced object is said to depend on, or, to imply, the operation of an external cause on the object. Therefore, the destruction of a produced object is the effect of the latter. But dependence on the operation of an external object is said to be pervaded by, or imply, uninevitableness. Therefore, DK's argument becomes equivalent to:

> The destruction of a produced object is
> not inevitable
> because
> The destruction of a produced object
> is dependent on the operation of an
> external agent on the object
> and
> For anything to be dependent on an
> external agent is to be not inevitable
> (or to be uninevitable).

In this inference, the conclusion is a negative proposition, but that alone would not make the inference an example of AHI. Even in other kinds of inferences, as we will see, the conclusion could be negative. Its *hetu* is being dependent on an external agent. This notion does not involve any kind of non-cognition, and therefore the inference is not an AHI in the straightforward sense in which an inference is an AHI when its *hetu* is the non-cognition of an object whose non-existence is what is inferred (*sādhya*). It cannot also be said to be an AHI on the ground that the *sādhya*, not-inevitableness, is not something seen by the inferer. The *sādhya* of no inference is seen, or directly cognized, by the inferer; if it is, then there is no need of inferring it.

Let us then try to ascertain the status of the *hetu* of this example in DK's scheme of *hetus*. According to it, a *hetu* is always only one of the three possible *hetus*, *Anupaladbdhi hetu* (AH), *Kārya hetu* (KH), and *Svabhāva hetu* (SH). We have already seen that it is not an AH. It is also not a KH, an effect functioning as a *hetu* for inferring its cause, because a thing's dependence on an external cause for being destroyed is not the effect of its destruction being not inevitable. Anything's being not inevitable is not a thing which can cause anything. Can we call it an SH? Being an *Aśoka* tree is an SH for being a true. That means that to be an *Aśoka* tree is to be a tree. As DU argues out the matter,[1] the destruction of a produced object cannot be uninevitable if it is, as said by the *Naiyāyika*, contingent upon an external cause. This may be taken to mean that he treats depending on an external cause, in DK's example, as an SH. If this

[1]SNS, NBT, pp. 161–63.

interpretation is accepted, then too the example is not one of AHI but one of *Svabhāva hetu* inference. Therefore, it is not tenable to treat it as illustrating a form or variety of AH even on the basis of this interpretation.

But perhaps the above interpretation is not a fair one. Hitting a jar with a hard stick is an external *cause* of breaking, that is, destroying the jar. It is an empirical matter whether or not we need an external cause to break or to destroy it. What makes its destruction uninevitable is not its being caused, but its being caused by something *external* to it. In the case of an SH, what makes anything an SH, for example, being an *Aśoka* tree an SH for being a tree, is not something external to an *Aśoka* tree but just the fact that it is an *Aśoka* tree. Therefore, one may say, operation of an external agent could be, if not an SH, at least a *Kāraṇa hetu*, a cause functioning as a *hetu*, for inferring its effect. We may accept all this, but that would also not show that DK's example is one of AHI, because a *Kāraṇa hetu* (causal reason) is not an AH. We can conclude therefore that DK's sixth form of AHI may have some polemical value in refuting a *Nyāya* view, but it is not a form of AHI, or any other independent form of inference, irreducible to the other forms which his theory of inference permits or sanctions.

7. *Kāryaviruddhopalabdhi* (Cognition of the Incompatible with the Effect of What is Denied)

The seventh form of AHI is that in which the *hetu*, as per DU's elaboration, is the cognition of something which is incompatible with the effect of the denied. That is why it is called *Kāryaviruddhopalabdhi* (cognition of the antagonist of the denied's effect). In it not –x (non-existence of x) is inferred on the basis of the cognition of y which is the antagonist of z and z is an effect of x. Its form would be:

There is no x
because
There is y and y is the antagonist of z, an effect of x.

The reasoning it embodies is this: Since y is there and z is incompatible with y, z is not there. Since z is not there, x, the cause having unobstructed capability to produce z, is not there, because had it been there, z, which is not there, would also have been there.

DK's concrete example is the following:

There is not here any agent (cause of cold)
having unobstructed capability to produce cold
because
There is fire here.

There is no cause, x, here having unobstructed capability to produce cold because there is fire, y, with which, cold, z, the effect of the cause, x, is incompatible and therefore the cause, x, is not there. Since the effect, cold, is not there, the cause having unobstructed capability to produce it is also not there.

In this inference also, the *hetu* is not the non-cognition but the cognition (*upalabdhi*) of something incompatible with the effect of what is denied in the conclusion. Therefore, its claim also to being called a form of AHI is questionable.

This kind of inference is drawn, says DU where because of distance, neither the presence of cold, nor that of the cause of cold, is visible to the inferer. But the presence of fire is visible because of the light it throws up.

Neither DK nor DU state what sort of fire, the fire present there has to be. But the form of inference would be valid only if the fire present has unobstructed capability to obstruct any agent, if it is there, from producing cold. This qualification of fire is necessary because every sort of fire cannot stop an agent to cause cold, for example, fire produced by a single matchstick. But when this qualification is added, the inference-form involves the fallacy of *petitio principii*. It would then have this form:

There is here no agent having
unobstructed capability to produce cold
because
There is fire here which has unobstructed
capability to obstruct any agent, if it is there,
from producing cold.
This inference is a *petitio* because to
say that there is a fire of this sort is to
say that there is no agent with unobstructed capability
to produce cold.

8. *Vyāpakaviruddhopalabdhi* (Cognition of the Opposite of the Denied's Genus)

In the eighth form of AHI, the *hetu* for denying the existence of something is the cognition of the opposite of that (*vyāpaka*) in which the denied is included, as its name '*Vyāpakaviruddhopalabdhi*' (cognition of the opposite of the genus of what is denied) suggests. For example, x is denied in the conclusion on the basis of the cognition of y which is incompatible with

z which stands for a wider class than x, including x within itself as a species or member of it. To first mention a skeletal example:

> There is no x here
> because
> There is y here, and y is
> incompatible with z which
> includes or subsumes x within
> itself.

The reasoning which backs it would be as follows.

There is y here and y is incompatible with z within which x is included. Therefore, y is incompatible with x also, and consequently both y and x cannot co-exist. This proves that x is not there (since y is there).

DK's concrete example is as follows:

> There is no sensation here of
> touching snow
> because
> There is fire here.

Besides its *hetu* being a cognition, and not a non-cognition, of something, like some others, two inferences seem to be merged here into one: (A) The presence of fire is incompatible with the sensation of cold. Therefore, there is no sensation of cold here. (B) But the sensation of touching snow is one of the various kinds of sensations of cold. Therefore, there is no sensation of touching snow here. Part (A) is an example of (*Svabhāvaviruddhopalabdhi*) (see Chapter 6.4) while (B) is an example of (*Vyāpakānupalabdhi*) (see Chapter 6.3). This feature characteristic to it goes against calling it a *separate* variety of AHI, since it is found to be a composite inference consisting of (A) and (B), and its *hetu*'s being the perception of the presence of fire, and not the non-perception, or non-existence of anything, goes against calling it a form of AHI.

The need for qualifying fire and the consequent entry of the fallacy of *petitio principii* (see Chapter 6.7), as already shown, are equally true of this form too, and in the same way, or for the same reason. That is why the analysis given there is not repeated here.

9. *Karaṇānupalabdhi* (Non-cognition of the Cause)

The ninth form of AHI is the inference of the non-existence of an effect from the non-existence of its cause. That is why it is called

Kāraṇānupalabndhi (non-cognition of the cause of what is denied). For example,

> There is no smoke
> because
> There is no fire.

The *hetu* here is the non-cognition of fire which is the cause of smoke whose existence is denied in the conclusion. The reasoning proceeds on the assumption that the absence of a cause implies the absence of its effect, that the existence of an effect without its cause is an impossibility.

Here the *hetu* is the non-cognition of the cause. We shall see in the discussion of the *Kārya hetu* (an effect functioning as the logical reason for its cause) (see Chapter 8) that from the presence of the effect the presence of its cause can be inferred because wherever the effect exists, its cause also exists. The transposition of this would be that from the absence of a cause, the absence of its effect can be inferred because where the cause, does not exist, its effect also does not exist. It is this kind of inference which *Kāraṇānupalabdhi* is. Therefore, it is not an independent form of inference. It can be very easily obtained from or reduced to the form of *anumāna* whose *hetu* is a *Kārya hetu* by transposing the latter's constituent propositions, as is demonstrated below:

(KHA) *Kārya hetu Anumāna* (Cause inferred from its effect)

> There is fire there (F)
> because
> There is smoke there (S)
> and
> (Wherever there is smoke there is fire [$S \supset F$]).

(KAH) *Kāraṇānupalabdhi hetu Anumāna* (Absence of effect inferred from the absence of its cause)

> There is no smoke there ($\sim S$)
> because
> There is no fire there ($\sim F$)
> and
> (Wherever there is no fire, there is no smoke [$\sim F \supset \sim S$]).

In symbolized form, the KHA would be $[S. (S \supset F] \supset F$
and the KAH would be $[\sim F. (\sim F \supset \sim S)] \supset \sim S$.

Each one of the two is quite obviously the transposed form of the other and therefore the two are equivalent, as shown below:

1	$[S. (S \supset F)] \supset F \equiv$	$[\sim F (\sim F \supset \sim S)] \supset \sim S$ Transp.
2	$\sim F \supset \sim [S. (S \supset F)]$	1 Transp. (of the left-hand side)
3	$\sim F \supset [\sim S \vee \sim (S \supset F)]$	2 De M

4	$\sim F \supset [S \supset \sim(S \supset F)]$	3	Imp.
5	$\sim F \supset [(S \supset F) \supset \sim S]$	4	Transp.
6	$[\sim F. (S \supset F)] \supset \sim S$	5	Exp.
7	$[\sim F. (\sim F \supset \sim S)] \supset \sim S$	6	Transp. (the right-hand side).

This topic will be further discussed in Chapter VIII.

10. *Kāraṇaviruddhopalabdhi* (Cognition of the Opposite of the Cause)

In the tenth form, *Kāraṇaviruddhopalabdhi* (cognition of the opposite of the cause), the logical reason for denying something in the conclusion is the cognition of the opposite of the cause of what is denied. Putting it schematically, if the existence of x is denied in the conclusion, and the cause of x is y, then the cognition of not-y, the opposite of the cause of x, is the logical reason for denying x.

DK gives the following example of this kind of AHI:

> That person does not have anything like horripilation, etc.
> because
> There is near him fire of a special kind of capability.

DU's elaboration[2] of the example is that fire of a special kind of capability refers to a fire which is capable of destroying or negating such effects of cold as horripilation, chattering of teeth, etc., which every fire, like the one of burning an oil lamp, is not capable of doing. Keeping this meaning of 'fire of a special kind of capability' in mind, if we probe into the logical structure of the example, what is achieved herein is this: Horripilation, etc. are denied as affecting the person concerned. The cause of horripilation, etc. is the hypothesized or imagined existence of cold there, which means that had there been cold and no counteractive cause, that person would have had the usual effects of cold like horripilation, etc. The opposite of cold, that is, the opposite of the cause of these effects, is fire of a special kind of capability, that is, fire with the required potency to undo the effects of cold by producing such effects as the required degree of warmth, etc. These effects of fire cancel the effects of cold if it is there, with the result that the person concerned does not experience any effect of cold. Therefore, the cognition of such a fire is the logical reason justifying the inference that that person does not have anything like horripilation, etc. even though he is not seen as not having these effects.

[2]SNS, NBT, pp. 167–68.

It is clear that DK's example is a complicated piece of inference. It involves more than one act of causal, or cause–effect, inference. It is really equivalent to the following inferential exercise in *Svārthānumāna*:

(A) That person does not have anything like horripilation, etc., the usual effects of cold if cold is there
because
There is fire of a special kind of capability near him
and
Whenever there is fire of a special kind of capability near a person, the result is that he does not have horripilation, etc., the usual effects of cold if it is there.

(B) That person's having fire of a special kind of capability near him results in his not having horripilation, etc., the cause of which would have been the presence of cold if it were there
because
The fire of a special kind of capability near him is the opposite of cold, the cause of effects like horripilation, etc.
and
Whenever there is near a person the opposite of the cause of something, the presence of the opposite near him results in his not having the effects of that something.

In the expanded form which reveals the complexity of DK's example, there are (A) and (B), two inferences of the type which DK calls *Kāryānumana* inferences pertaining to the presence or absence of effects from the presence or absence of their causes. This means that this, the tenth, form of AHI too is not an independent form of inference, nor an inference of the *anupalabdhi hetu* type, since it can be explained as a multiple use of *Kāryānumana*.

11. *Kāraṇaviruddha–Kāryopalabdhi* (Cognition of the Effect of the Opposite of the Cause of What is Denied)

In the eleventh, the last of AHI on DK's list of AHIs, the logical reason for denying something in the conclusion is the cognition of the effect of the opposite of the cause of what is denied. In the schematic form, if x is denied and y is the cause of x, the logical reason for denying x, the *Anupalabdhi hetu* for doing that, is the cognition of z which is the effect of not –y, the opposite of the cause of x. The reasoning supporting, or, involved in, this inference is that since z is there, its cause not –y must be there, because as per the rule governing *Kārya hetu*, the *Kārya* (effect)

implies its cause. Since not –y is there, its opposite y is not there. Since y, which is the cause of x, is not there, its effect, x, cannot be there, as per the rule of *Kāraṇānupalabdhi* (non-cognition of the cause) (see Chapter 6.9), which lays down that if the cause is absent, its effect must be absent. Therefore, the presence of the effect x can be denied.

In this form of inference as the conclusion is drawn on the strength of the cognition of the effect of the opposite of the cause of what is denied in the conclusion, DK calls it *Kāraṇāviruddhakāryopalabndhi* (cognition of the effect of the opposite of the cause of the negated). DK gives the following example to illustrate it:

> This place does not have any person having horripilation, etc.
> because
> This place has smoke.

The context of the inference is this: The inferer, because of his disadvantaged position in relation to the place concerned, sees only smoke coming out of it. He does not see its cause, fire there, nor does he see the absence of the effects of cold, like horripilation, chattering of teeth, etc. on any person present there, nor even the presence of any person there. But he certainly sees smoke there, DU says,[3] so strong that it implies the existence of a fire capable of destroying the effects of cold if it is there. It is from the cognition of such a smoke that he infers the absence of the effects of cold on a person who may be there.

It is obvious that the inference of the absence of the effects of cold from the cognition of smoke is not a one-step process. In fact, what takes place here is a composite inference in which the inferer makes use of some of the truths he is aware of as premises, though in DK's example, they seem to be assumed and are not mentioned. When the inference is fully unfolded, it would have some such form:

(1) There is smoke there of a kind of strength which can be caused only by fire capable of destroying the effects of cold, if cold is there.
(2) Therefore, there is fire capable of destroying the effects of cold, if it is there.
(3) Therefore, there are no effects of cold, like horripilation, etc., if cold is there, on a person who may be there.
(4) Wherever there is a fire capable of destroying the effects of cold, the effects of cold must be absent there.

[3]Ibid., p. 172.

This would be a briefer unfolding of the inference, and it is in no way inaccurate. DU is right in saying that the cognized smoke must be of a certain specified kind of strength because a feeble smoke does not imply a fire capable of counteracting the effects of cold. As we all know, from the smoke coming out of a smoking pipe we cannot infer the existence of fire in the pipe's mouth capable of destroying any effect of cold the smoker may be feeling. In this form, the inference is not an independent form of inference, nor an AHI. The inference of (2) from (1) is the inference of a cause from an effect of it and that of (3) from (2) is that of an effect from the cause capable of producing it.

There can also be given a larger unfolding of DK's example which may run as follows:

(1) This place has fire of a certain strength
because
(2) It has smoke of a certain strength
and
(3) Wherever there is smoke of a certain strength, there is fire of a certain strength.
(4) This place does not have any person with horripilation, etc. (the effects of cold)
because
(5) It has fire
and
(6) Fire is the opposite of cold
and
(7) Wherever there is an opposite of cold, in that place a person does not have horripilation, etc. (the effects of cold).

In this sequence, (1) is inferred from (2) and (3) in the manner in which a cause is inferred from its effect. (4) is inferred from (5), (6) and (7) in the manner in which an effect is inferred from a cause because that place does not have anyone who has horripilation etc., that is, the cancellation of the effects of cold, if cold were there, on a person, if he were there, is the effect of fire which the place has.

This analysis thus shows that this form of DK's AHI too is not an independent form of inference, nor one of AHI. It is rather a mixture of inferring cause from effect and of inferring effect from cause.

Conclusion

An overview of the various forms of AHIs given by DK and discussed here reveals that in each one of these, the conclusion is a negative singular existential proposition of the form, 'There is no x at A (or in A)' or of the form 'A does not have x', in which x may be a property, or, an object, and A a particular place, object or person, that is, a particular individual. This is the only feature common to all AHIs. The negative conclusion asserting the non-existence of x is drawn on the basis of the non-perception of x, or on the perception of some y which is, directly or indirectly, the opposite of x. y would be a direct opposite of x if the existence of y is incompatible with that of x, and an indirect opposite if the existence of the cause of y is incompatible with the existence of x, or with that of the cause of x, etc. DK's obvious claim is that AH is different from both SH and KH, and therefore AHI is different from both SHI and KHI. We have seen that this claim does not hold good for all the varieties of AHI.

But it has to be admitted that in presenting his different forms of inferences with a negative conclusion, DK has made very fine and subtle distinctions. He has shown great sensitiveness to the possible ways in which a negative proposition may be validly drawn. Therefore, even if all the eleven varieties of AHIs given by him are not, strictly speaking, AHIs as per his definition of an AHI, or not different from an SHI, or a KHI, they are worth studying as examples of logical ingenuity.

SEVEN

Identity as Logical Reason
(Svabhāva Hetu)

1. A Thing's being a Logical Reason Solely because of its Existence and its Consequent Analyticity

The second kind of logical reason, *Svabhāva hetu* (SH), DK says, is that which, simply by virtue of its existence (*svabhāva* = *sva* [own] + *bhāva* [existence]), because of its being what it is, entails, or logically guarantees, the existence of the inferred object, or property, in the locus (*pakṣa*). To deduce the latter from the former, we need to know nothing other than the fact that the *hetu* exists in, or is a property of, the *pakṣa*.[1] This is because the *hetu* is, in a sense, identical with the *sādhya*. DU elaborates DK's formulation by saying that a *hetu* of this type in whichsoever an inference it functions as a *hetu*, is existentially, or, intrinsically, related to the *sādhya*. It does not need anything else in order to be related to the *sādhya*. For a thing to be, or to have, what this *hetu* denotes, is to be, or to have, what the *sādhya* denotes.[2] What he means is

[1]*Svabhāvah svasattāmātrabhāvini sādhyadharme hetuh.*

SNS, NB, p. 124.15.

That which is a logical reason solely because of its being the thing it is (*svabhāva hetu*), is a thing the mere existence of which is a sufficient reason for that of the inferred object (or property).

[2]*Tasmin sādhyae yo hetuh sa svabhāvah tasya sādhyasya nānyah.*

SNS, NBT, p. 124.

The logical reason of such an inference (whose *hetu* is a *svabhāva hetu*) is essentially related to the inferred object, and is not separable from the latter.

that a mere conceptual, or logical, analysis of the attribution of the *hetu* to a thing validly yields the attribution of the *sādhya* to it. That is, if h is the *Svabhāva hetu* and s the *sādhya*, and 'A an object which is h (or has h)', then from a conceptual analysis of 'A is h (or has h)' we can deduce that A is s (or has s) because, for any thing, to be h, or to have h, is necessarily to be s, or to have s. Another way of saying it is that it is not logically possible for anything to be h, or to have h, and not to be s, or to have s.

To make more at home what has been said above, let us take DK's concrete example:

This (plant) is a tree
because
This is a *Śimśapā*.

Here *Śimśapā*ness, or being a *Śimsapā*, is the *hetu* and treeness, or being a tree, the *sādhya*. The plant referred to by 'this' is inferred to be a tree from its merely being a *Śimśapā*, and not from its being a *Śimśapā* of this, or of that, description, tall, or small, with leaves, or without leaves, etc.

DK's and also DU's discussion of SH, or of *Svabhāva hetu* inference (SHI) is very brief. Perhaps they leave it brief because they find its validity so obvious, so apparent, from its very structure. If A is a *Śimśapā*, a particular kind of tree, then that it is also a tree is so obvious that it needs no argument to explain or prove it. A tree of a particular kind is a tree, just as a Buddhist logician is a logician. This obviousness is there because of its analyticity which it bears on its face. To say this is a tree because it is a *Śimśapā* is really to say that this is a tree because it is a *Śimśapā* tree, or a particular kind of tree. A *Śimsapā* tree is, analytically, a tree.

2. Analyticity of *Svabhāva Hetu* Inference and Linguistic Usage

Another name of the tree denoted by '*Śimśapā*' is *Aśoka vṛkṣa* (*Aśoka* tree). It is a fact of linguistic usage of the two terms in Sanskrit that the word '*Śimśapā*' alone is used to denote the kind of tree it denotes. But the word '*Aśoka*' alone is not so used, rather we have to use the phrase '*Aśoka vṛkṣa*' (*Aśoka* tree) to denote the tree. When we say this is a tree because it is an *Aśoka* tree, analyticity of the inference or reasoning is visible from the very structure of what we say. It may not be clearly visible when we say this is a tree because it is a *Śimśapā*, since the word 'tree' has not been used after '*Śimśapā*'. Had DK's example said this is a tree because it is a *Śimśapā* tree, its analyticity would have been equally clearly visible.

I am not suggesting that DK or DU, is not aware of this elementary

fact of usage. But it seems to me that they did not realize the full logical significance of this. Whether the word 'tree' does or does not occur after '*Śiṁśapā*' in the sentence, 'This is a *Śiṁśapā*', the sentence means this is a *Śiṁśapā* tree. And therefore, inferring 'This is a tree' from 'This is a *Śiṁśapā*' is not to say anything other than what is said by 'This is a *Śiṁśapā*', and therefore, not to communicate any new information. This would mean that an SHI, any inference whose *hetu* is an SH, does not give any new knowledge or *samyak jñāna* which by definition is new knowledge as DK claims it to be. Inference yields *samyak jñāna*, and therefore SHI must also do that being one of its three kinds, the two others being *Anupalabdhi hetu* inference and *Kārya hetu* inference. Of the two features of *samyak jñāna*, the property of being uncontradicted by experience (*avisaṁvādakatā*) and that of being communcative of some new information about an object not hitherto known (*anadhigatārthabodhakatā*), the conclusion of an SHI has the first. 'This is a tree' is a proposition which no experience can contradict because it is equivalent to 'This *Śiṁśapā* (tree) is a tree'. But it does not have the second feature because 'This is a tree' does not give any information about the *pakṣa*, the thing denoted by 'This', which has not already been given by the premise, 'This is a *Śiṁśapā*'. To affirm of any object that it is a *Śiṁśapā* is a sufficient reason, or all that we need, to affirm of it that it is a tree. This is so because to be a *Śiṁśapā* is to be a tree of a particular kind. That is why it is said that the *sādhya* is essentially, or intrinsically, related to the *hetu* because the concept or property of being a tree is involved in that of being a *Śiṁśapā*. There is a relation of partial identity (*tādātmya*) between the two concepts in the sense that to be a *Śiṁśapā* is necessarily to be a (kind of) tree, though to be a tree is not necessarily to be a *Śiṁśapā*. An object may be a tree but not a *Śiṁśapā*, because there are many other kinds of trees besides *Śiṁśapā*s. 'A is a *Śiṁśapā*', entails 'A is a tree' but the latter does not entail the former.

When a particular kind of tree is valued just for being that kind of tree, and not for its flower or fruit, etc., as it seems to be the case with a *Śiṁśapā*, to refer to the tree we may, or may not add the word 'tree' to its name. We may refer to a plant by calling it say, a *Śiṁśapā*, when we really refer to the tree called '*Śiṁśapā*'. But when a tree is valued for its flower or fruit as well, and not for just being the kind of tree it is, we have to add 'tree' to its name when we want only to refer to the kind of tree it is. For example, when we want to refer to the mango tree, we have to use the term 'mango tree', because if used alone, the word 'mango' would ordinarily mean a mango fruit. This is so because the mango fruit is valued more than anything else of the mango tree. This is also the case with 'apple' and 'apple tree'. Since we ordinarily mean by 'mango' a mango fruit,

we do not normally say 'This mango fruit is sweet', but simply 'This mango is sweet'. Using 'mango' in its ordinary sense we cannot say:

(A) (1a) This is a tree
because
(2a)) This is a mango.

We can only say,

(B) (1b) This is a fruit
because
(2b) This is a mango.

But we can say,

(C) (1c) This is a tree
because
(2c) This is a mango tree.

But then the analyticity or the tautological character of what we say in (C) is obvious from the form of (1c) and of (2c). Nobody would like to call it an inference yielding a piece of new knowledge.

DK's example of inferring:

(D) (1d) This is a tree
because
(2d) This is a *Śiṁśapā*

gives the impression of its being a worthwhile inference in his sense of the term, that is, of being a giver of knowledge because the analyticity which is apparent on the face of,

This is a tree
because
This is a *Śiṁśapā* tree

is not equally apparent on its face. But the moment we realize that '*Śiṁśapā*' in (2 d) really means '*Śiṁśapā* tree', the analyticity of the inference no more remains concealed. That the linguistic form, 'This is a *Śiṁśapa*' is permissible for 'This is a *Śiṁśapā* tree' may be attributed to the fact of the usage of the word '*Śiṁśapā*'. This usage may be due to the fact that a *Śiṁśapā* tree is valued simply for its being the kind of tree it is, and not for its flower or fruit etc. This usage is in itself innocent, but like many such others, it may make an analytic inference, constructed in accordance with it, appear to be non-analytic.

From all this, it is clear that inferring in (D) (1d) from (2d) is not making any epistemic progress. It is only stating the linguistic fact that to call a plant a *Śimśapā* (tree) is to call it a tree. To say or know that a thing is a tree on the ground that it is a *Śimśapā* (tree) is not to say or know anything more, or other than saying or knowing, that it is a (*Śimśapā*) tree. This means that being a *Śimśapā* is not functioning here as a *hetu* for enabling one to infer anything new of the *pakṣa*. In DK's sense, for anything to function as a *hetu* is to function as a logical mark of something else, as a pointer to something else, and not as a pointer to itself. Being a *Śimśapā*, in being a mark, or *hetu* of being a tree is not pointing to or leading one to something other than or outside of itself because being a tree or treeness is not something other than or outside of it. It is, rather, identical with a constituent of it. Being a *Śimśapā* is to be a tree of certain kind. *Śimśapā*ness is treeness plus the set of those properties which distinguish a *Śimśapā* tree from non-*Śimśapā* trees.

3. Deductive Character of *Svabhāva Hetu* Inference

As per elementary formal logic, to infer 'This is a tree' from 'This is a *Śimśapā* tree' is valid, and being a *Śimśapā* tree is a logical reason for being a tree. But formal logic or logic allows this mode of speaking because it admits that a deductive inference, which this inference is, does not give any new piece of information, that its conclusion does not go beyond its premise, or set of premises. Therefore, there is no objection from the standpoint of formal logic to calling the above inference a *bona fide* inference, or to calling a thing's being a *Śimśapa* tree a logical reason or ground for its being a tree. The problem arises in DK's logical theory because he assigns to inference the role of giving new knowledge, since it is or gives, *samyak jñāna* (right knowledge), which it would not be or give, if its conclusion does not go beyond its premise or set of premises. It is to preserve the knowledge-giving character of inference that he defines a *hetu* as that which takes us to something other than itself, to something new. It is, thus, his own conception of inference which is responsible for the difficulty in calling SH a logical reason, or SHI an inference as per his own specification of the concept of a *hetu* and that of inference.

It may be said that the problem raised here is not a genuine one because it has been assumed that SHI, or inference as such, according to DK, is deductive, when it is really not. It is true that I have shown SHI, and also AHI, to be deductive, and when I discuss the third kind of

inference, *Kāryānumāna* (inference of a cause from an effect), that will also be shown to be deductive. The controversy whether inference, in DK's theory of inference, or in the classical Indian theory of inference in general is or is not really deductive, will be discussed in some detail in Chapters 12 and 13 after having discussed *parārthānumāna* (inference for someone else). I will do this because it is largely in the context of *parārthānumāna* that the claim has been made by some modern thinkers that the Indian theory of inference (of course, including DK's) is not deductive, or is neither deductive nor inductive, etc.

Here I would like to reaffirm that the deductive character of SHI is quite obvious, perhaps more obvious than that of others. According to DK's own definition of SH, any x's being a *Śimśapā* is the *hetu* for its being a tree, which is the *sādhya*, because the *sādhya* is identical with a constituent of x's property of being a *Śimśapā*. This is so because to be a *Śimśapā* is to be a tree of a particular kind or description, that is, to be a *Śimśapā* tree. Therefore, the inference,

x is a tree
because
x is a *Śimśapā*

is equivalent to

x is a tree
because
x is a *Śimśapā* tree

which is clearly a formal deductive inference of the form,

x is an a
because
x is an ab.

and valid because of its form.

There is no need for stating a *vyāpti* (universal proposition) here like 'Whatever is a *Śimśapā* tree is a tree' because a *Śimśapā* tree cannot but be a tree. A *vyāpti* is needed when it is not clear from the face of the *hetu* as to how it is related to the *sādhya*. The *vyāpti* makes it known that the link between the two is one of universal concomitance. But in the case of a *Svabhāva hetu* it is boldly written on the face of the *hetu* that the *hetu* is inseparable from the *sādhya*, that a *Śimśapā* tree cannot ever be a not-tree. Stcherbatsky, since he uses '*Aśoka*' for '*Śimśapa*' in his example,

says that the *vyāpti* used here is 'Whatever is an *Aśoka* is also a tree'.[3] Certainly, such a *vyāpti* can be stated, but it is redundant. To infer that a *Śimśapā* tree is tree we do not need a generalization. Nor do we need a well-proven example because nothing can be more well-proven than a *Śimśapā* tree's being a tree, an ab's being an a.

A *vyāpti* of the type mentioned above does not give an empirical generalization; it only states a tautology, a logical or linguistic truth. 'Whatever is an *Aśoka* is also a tree' is not like 'Whatever is smoky is also fiery'. It rather says that to be an *Aśoka* means to be a particular kind of tree. And, in inferences like an SHI, no thing or entity implies any other thing or entity. Rather, it is the concept of a thing, what we think, or say of it, which implies something else in the sense that if we think of it as x we have also to think of it as y because the concept or thought of it as x involves the concept or thought of it as y. We cannot do otherwise because what we would then do would be a self-contradiction. This is what we mean when, in propositional logic, we say that if p implies q, we cannot say, without contradicting ourselves, that p but not q. This is the case with our feeling coerced in saying that if this plant is a *Śimśapā*, it is a tree. We cannot say that it is a *Śimśapā* but not a tree without contradicting ourselves because the concept of a *Śimśapā* involves that of a tree. That is why the former concept implies the latter concept.

4. A Problem for DK's Definition of Logical Reason and Inference

Since any inference is a giver of knowledge, if it is one, through the instrumentation of a *hetu*, a viable *hetu* must help the inferer in at least making his existing knowledge of the object concerned (the *pakṣa*) more detailed, or specific. On perceiving smoke on a hill but before inferring the existence of fire on the hill on the ground of its having smoke, he only knows that the hill has smoke. If he does not use smoke as a *hetu* to infer the existence of fire on it, his knowledge would remain limited to his cognition that the hill has smoke. But when he uses smoke as a *hetu* of fire, and infers the existence of fire on the hill, his existing knowledge would become more detailed, contextual, or specific, because he would now know that the hill which has smoke also has fire. This knowledge is definitely more detailed, contextual, or specific than his earlier knowledge that the hill has smoke. This happens because to know

[3]Th. Stcherbatsky, *Buddhist Logic* II (Dover, 1962), p. 66 Fn. Henceforth referred to as BL.

that the hill has fire is to know something different from knowing that the hill has smoke. All this is not true of the use of an SH, or of an inference which makes use of it. To infer that this object is a tree on the ground of the earlier knowledge that it is a *Śimśapā* tree, that is, by using 'being a *Śimśapā* tree' as SH, is not to acquire a more detailed, contextual, or specific, knowledge. To know that it is a tree is on the contrary, to know something *less* detailed, contextual, or specific than the earlier knowledge that it is a *Śimśapā* tree. This shows that being a *Śimśapā*, or any SH, cannot perform the function of a genuine *hetu* as DK claims it to do. The next step which one can naturally then take is to deny that, according to DK's own definition of inference and *hetu*, an SH-using inference, an SHI, is not a genuine kind of inference.

But suppose someone does not know that a *Śimśapā* is a tree. He thinks it is a climber. It may be said that if he makes the inference that this plant is a tree because it is a *Śimśapā*, he would be knowing something he did not know earlier when he only knew that it was a *Śimśapā*. But then, by definition, being a *Śimśapā*' would not be an SH for him. Something is an SH only if, in virtue of its existence alone, it implies the existence of the *sādhya* in the object in which it itself exists, that is, in the *pakṣa*. Since he does not know that a *Śimśapā* is a tree, the mere existence of *Śimśapā*-ness in the object concerned would not even suggest to him, what to speak of its implying, that tree-ness also exists in it. Suppose a botanist wants to put *Śimśapā*s into any one of the three classes of plants, climbers, herbs and trees. The reasonable way for him to do that would be to find out first which of the three sets of criteria a plant has largely to fulfil in order to be called a climber, a herb, or a tree, and then to determine which of these sets of criteria *Śimśapā*s largely, or predominantly, fulfil, and classify them accordingly. Even for him, since he does not know, or assume, that a *Śimśapā* is a tree, a plant's merely being a *Śimśapā*, its mere existence as a *Śimśapā* (*sva sattā mātra*), would not be a *hetu*, that is, an SH, for calling it a tree. And, if he already knows, or assumes, that a *Śimśapā* is a tree, he would need no inference, or no classificatory exercise, to call it a tree on the ground of its being a *Śimśapā*.

EIGHT

Effect as Logical Reason (Kārya Hetu)

1. Causal Inference as Necessary

A *Kārya hetu* (KH) of an inference is the effect of its inferred object (*sādhya*). In a *Kārya hetu* inference (KHI), the existence of the cause is inferred from the cognition of the existence of its effect. For example, smoke, the effect of fire would be the *Kārya hetu*, if used as a logical reason for inferring the existence of fire its cause. When one perceives smoke coming from a hill, he infers that there is fire on that hill. The effect necessarily implies its cause because the existence of the effect is not possible without the existence of its cause. DK says that a belief in the law of causation is a well-established belief of the common people. It is believed that when there is an effect, there must be its cause, and when there is no cause, there cannot be any effect. Since the belief in causation is widely held and successfully guides our behaviour, it is not necessary to explain its nature in detail, or the nature of *Kārya hetu* the use of which is based on this belief. As it is never the case that there is an effect without its cause, the existence of something which is the effect of something else can validly be used as the *hetu* for inferring the existence of the latter, its cause.[1] DK's treatment of *Kārya hetu*, like that of *Svabhāva hetu* is also very brief, and for the same reason: the obviousness of its being a logical reason for its *sādhya*, as is true of the latter.

That an effect implies its cause is obvious, or rather, tautological

[1]SNS, NBT, p. 126.

and therefore vacuously necessary because to be an effect implies that it has been caused by something else which is its cause. Thus, if x is an effect, there must be some y, not identical with x, which is its cause. Therefore, to say that an effect implies, or is a *hetu* for inferring its cause is to say nothing substantive, or of some great logical importance. To say it is as trivial as to say that a woman's being a mother implies that she has delivered at least one child. But to say that a particular thing E is the effect of, or has been caused by, another particular thing C, is not to say anything trivial or tautological because it can be asserted, not on the basis of the analysis of the concept of E (say, of smoke) but only on that of the experience of several instances of E's having been caused by C's. Similarly, only on the basis of having empirically ascertained that the woman W's child is G we can say that W is the mother of G. On the basis of our analysis of the concept of being a mother, we can only say that the mother W has delivered a child but not that she has delivered G. What I want to point out is that although an object which is an effect (*Kārya vastu*) logically implies the object which is its cause (*Kāraṇa vastu*), it does not logically imply which particular object is its cause. That can be found out only by empirical observation or investigation.

Since only experience can tell us that C is the cause of E, or that E is the effect of C, these propositions would be empirical and therefore in principle falsifiable in future experience. Therefore, if we already know that E is the effect of C, we can infer that C exists when we see that E exists. This is what we do when we infer that the hill has fire from perceiving that it has smoke by using smoke on the hill, the effect–object, as the *hetu* for inferring fire on that hill, the cause–object. The effect–cause relation, or the cause–effect relation is empirical. Therefore, the inference of the existence of the cause of an object from that of its effect is an empirical inference since it is to infer the existence of that which has, in fact, as found in experience, caused the object we consider to be its effect. This inference would be valid, DK and other Indian logicians say, when the relation between E, the object consided to be the effect, and C, the object considered to be its cause, is such that wherever there is E, there is C and wherever there is no C, there is no E. Since the relation between E and C is empirical, the larger the experience of finding the instances of E and C having this sort of relation (*abinābhāva*, that is, no E without C), the greater would be the justification of inferring the existence of C from that of E.

All the instances of E and C cannot obviously be completely exhausted. Therefore the truth of the general proposition, 'Wherever there is E, there is C, and wherever there is no C, there is no E', can at the most be claimed

to have a high degree of probability, and never to have any absolute certainty or necessity. The natural corollory of this would be that the inference of C from E also can claim to have only a high degree of probability and never any absolute certainty or necessity. This would mean that the possibility of the corollory's as well as of the generalization's proving to be false sometime in the future cannot be ruled out. But neither DK, nor any other classical Indian logician accepts this possibility. On the other hand, DK's claim is that all the three kinds of *hetus*, AH, SH, and KH, give conclusions which are not just probably, but certainly, true. The inference of the non-existence of a jar from its non-perception, that of a plant's being a tree from its being a *Śimśapā*, and that of fire from smoke, all are claimed by him to be equally stringent and true.

2. Dependence as the only *Hetu*-making Relation

DK asserts that only a thing's dependence on the inferred object for its existence (*svabhāva pratibandha*: *sva* = own, *bhāva* = existence, *pratibandha* = dependence) makes it a *hetu* for inferring the existence of the latter. DU points out that both SH and KH involve this sort of dependence. The effect, smoke, the existence of which is the KH for inferring the existence of its cause, fire, depends for its existence on that of its cause, fire, while that of a plant's being a *Śimśapā*, which is the SH for inferring that the plant is a tree, depends on its being a tree. The dependence of the *hetu* on the *sādhya* in the two cases, he adds, is of the same sort,[2] that is, equally necessary in both the cases.

There is no doubt of a relation of dependence between the *hetu* and the *sādhya* in both the cases. But it is not of the same sort or type in both of them. The dependence of smoke on fire is empirical because we can affirm it only after empirically ascertaining in a number of cases how the two are related with each other. But affirmation of a plant's being a *Śimśapā* as being dependent on its being a tree does not have to be on the basis of empirical observation of a *Śimśapā*'s being a tree in a number

[2]*Kāraṇe svabhāve ca sādhye svabhāvena pratibandhah Kāryasvabhāvayoraviśiṣṭa*. ... Ibid., pp. 129–30.

(The logical mark as) an effect (*Kārya hetu*, e.g. smoke) and (as) a conceptual complex (*Svabhāva hetu*, e.g. *Śimśapā*-ness, the complex property of being a *Śimśapā*, a tree of a particular kind) are in the same way dependent for their existence on the inferable object (*sādhya*), the cause (i.e. fire) and the analytically deducible property (i.e. treeness) respectively. (Being smoky depends on being fiery and being a *Śimśapā* on being a tree with the same stringency.)

of cases. The relation between the two is conceptual or logical. From simply the analysis of the concept or the meaning of being a *Śimśapā*, we come to know that a plant's being a *Śimśapā* involves or depends on its being a tree. That is, no x can be a *Śimśapā* unless it is a tree which means the same thing as saying that x's being a *Śimśapā* logically depends on its being a tree. But from the mere analysis of the concept or meaning of smoke we cannot come to know that any x's being smoky depends on its being fiery. This is the reason that the relation between being smoky and being fiery is contingent and that between being a *Śimśapā* and being a tree is necessary.

Taking dependence in the two cases to be of the same type may lead one to think either: (a) that the relation between being smoky and being fiery is as necessary as that between being a *Śimśapā* and being a tree is, or (b) that the latter is as contingent as the former is. To take either one of the two leads is to take a wrong lead. DK, or DK as interpreted by DU, seems to have taken the first lead.

3. Causal Monism Needed but not Stated

There is another problem with DK's theory of causal inference. From the existence of a thing, we can validly infer the existence of a particular thing as its cause only if the former is producible by one and only one particular thing. If E is producible by any one of B or C, we cannot infer from the occurrence of E the occurrence of B, or that of C, but only that of B or C. That is, after knowing that A has E, we can only say, using E as a *Kārya hetu*, that A has either B or C. But such a disjunctive conclusion would leave us doubtful about which one of the two A really has. Therefore the resulting cognition that A has B or C would not be a means to the successful pursuit of an object of desire (*puruṣārthasiddhi*), say, to that of attaining A which has B, or A which has C. Therefore, it would not be a piece of right knowledge (*samyak jñāna*) because right knowledge, by definition, must have the built-in capability of being such a means. Therefore, causal inference cannot be a variety or species of valid inference, or of *samyak jñāna*. To make causal inference meet the requirements of being such a means, it has to be proven that the doctrine of the plurality of causes is false, which neither DK nor DU, seems to have done. Perhaps Buddhist logicians have assumed that it is false.

Stcherbatsky[3] interprets the Buddhist theory of causation to hold,

[3]BL I, pp. 129–31.

and quite correctly, that the cause of no event or object is a single thing but a totality of factors unobstructed by any opposing or antagonistic one. This totality is not one of strict limits in the sense that it is not possible to say authoritatively that it consists of only such and such factors and of no other. Therefore, in the Buddhist view, the only way to authoritatively designate the cause of any thing is to say that the state of the universe, immediately preceding its coming into being, is the cause of the thing's existence. This position he considers to be a good reason for DK's and DU's view that from the existence of the cause of a thing, for example, that of fire, the cause of smoke, we cannot deduce the existence of its effect, smoke, because the cause may be obstructed by some factor to produce its effect and consequently may not produce the effect. This is true, and this is DK's as well as DU's reason for saying that we cannot infer the occurrence of the effect from that of its cause. But Stcherbatsky does not draw another implication of this conception of a cause which makes infructuous or infelicitous DK's theory of inferring the cause from its effect. If the effective cause of any x is nothing but the totality of all positive conditions and the absence of all negative conditions, immediately preceding x's coming into being, then this totality would surely be unstatable because of the number of its components being illimitable. Therefore, we would be able, as a Buddhist would say, only to characterize the cause in a blanket way as the preceding state of the universe. Like a Buddhist, Stcherbatsky takes this admission to be a saving grace for the Buddhist theory of *Kārya hetu* (KH) or inference whose *hetu* is a KH. But it is not.

On the contrary, it makes, as I have claimed above, the theory infelicitous because, then, any KH, x, would yield the same causal conclusion: the assertion that there existed a particular state of the universe, unobstructed by any negative, that is, opposing factor, immediately preceding x's coming into being, which produced x. We cannot make this statement fully precise or definitive because we cannot exhaustively enumerate all the constituents of any state of the universe. Moreover, such a statement is a virtual tautology in the Buddhist scheme of things because by definition, everything is preceded by such a state of the universe, because there is nothing which can be called the first thing or the first moment of the series of things which constitute the universe. It is obvious that such a conclusion namely 'There is a particular state of the universe immediately preceding x', is too indeterminate to be a means to attaining any object of desire, which it must be in order to qualify for being called right knowledge.

4. Effective and Ineffective Causes: A Valid Distinction but not Trouble-free

Assuming that everything is an effect of something else, as we commonly do, or Buddhists do, when something is there, it is analytic to say that there is a cause of its being there. Therefore, to use the existence of an object to infer the existence of that which is the cause of its existence is quite legitimate. DK and DU make a distinction between an effective (*samartha*) and an ineffective (*asamartha*) cause. An object is an effective cause when its capability to produce its effect is not obstructed by any contrary factor. Only such an object, only an effective cause effectuates, that is, produces its effect. One whose capability is obstructed in any way does not. Therefore, an object, a cause, does not produce its effect simply because it exists, but only when its capability to produce its effect is unobstructed or unhindered. It is the existence of this sort of a cause, of an effective cause, which is inferred from that of an object which is its effect. Since the effect is there, the cause has effectuated, that is, it has not been obstructed by anything from producing its effect. Thus, the existence of an effect implies the existence of an effective cause of its having come into being. Therefore, from the non-perception (*adarśana*) of an object, only the non-existence of an effective cause, that is, one of unobstructed capability (*abādhita sāmarthya*) to produce that object, can be inferred.[4] We can do that because had there been an effective cause of the object, it would surely have been there. The existence of such a cause, say, fire of unobstructed capability to produce smoke (CF), would be a sufficient condition for smoke (S) being there. CF would then imply S, but S may not imply CF. S would imply CF if CF is also a necessary condition of S. CF would be a necessary condition of S if CF is the only sufficient condition of S. Then CF would imply S and S would imply CF. In such a case, the cause can be inferred from the effect, and the effect from the cause. This would be the situation if it is assumed that every object has one and only one cause. When S has two causes, say when either one of CF or DF can produce S, then from S we can infer, as already shown, only CF or DF, and from either one, CF or DF, we can infer S. If DK holds the monistic theory of causation according to which every event has one and only one cause, then he would be *entitled* to hold, as he does, that the existence of an effect is the *hetu* for inferring the existence of its effective cause, but would also be committed to hold that the existence

[4]SNS, NB, p. 154.32.

of an effective cause is also the *hetu* for inferring that of its effect. But he does not seem to hold the latter view.

What I want to emphasize is that if DK holds the doctrine of the plurality of causes, he cannot, as already shown, defend his claim that a causal inference, one from effect to cause, is a means to attaining an object of desire. Suppose DK opts for the theory of the singularity of causes, the one-effect–one-cause theory. Then, from the existence of one effect that of its cause can be inferred. The conclusion would, he may say, then be fully determinate, or at least determinate enough, to be a means to the attainment of an object of desire. But then it would not only be the case, as already shown, that the existence of an effect would entail that of its effective cause but also the existence of an effective cause would entail that of its existence.

For DK, an effective cause means that which effectuates that is, produces its effect and an effect means that which is produced by an effective cause. Then the inference of a cause from its effect (or its converse) would be deductive and therefore not communicative of any new information, not a cognition of anything not already known (*anadhigata artha*). But only a cognition which is communicative of some new information, as held by DK, can motivate one to act, to try to have, or avoid having, the object cognized. Therefore, now also causal inference would not have any motivational force and on that account lose its claim to being right knowledge.

The way DK defines causation and effectuation, the relation of effect to cause and of cause to effect, makes causal inference necessitarian, but non-informative. This is also true, we have seen, of inferences using *Anupalabdhi hetu* and *Svabhāva hetu*. These are the only three types of permissible inferences according to him, and all of them are formal and deductive. Therefore, it is not unfair to say of him that his theory of inference ultimately turns out to be a theory of deductive inference. The unpleasant implication of it, of course, is that then he cannot defend his claim that every inference is a giver of some new information about its object. A logical corollary of it is that inferential cognition cannot be called right knowledge if right knowledge, as defined by him, must be a cognition of things not already known. This is natural, and not in any way tragic, for the concept of deductive inference. Deductive inference does not give any new knowledge because it does not go beyond its premises. This does not mean any tragedy for it because it is not made useless thereby.

NINE

Some Problems in Proving the Completeness of Dharmakīrti's Theory of Inference

1. *Hetu*-Types as the Basis for Inference-Types

The discussions in the preceding chapters have made clearly visible the structure of the theory of inference which DK has adumbrated in the course of explaining the various aspects and components of inference for oneself. Since inference for oneself and inference for someone else, SA and PA, do not differ in their logic or as logical things, therefore, this theory is in effect, DK's theory of inference as such. We will see when we will discuss what he has to say about PA that, in that part of his work, he only fills in some details, or makes some refinements. He does not say anything there which makes or implies any departure from it. To connect the theory, as presented in the preceding chapters, with the discussion of the issue of its completeness, which is the subject of this chapter, I am stating it below in a synoptic form.

A valid inference yields right knowledge which is uncontradictable in experience and communicative of some new information about its object. It yields this information about the object, say, x not directly but indirectly because the information is made available through the instrumentation of another object, say, y which is the *hetu* (logical reason). y performs this function by virtue of its three features which consist in its being necessarily present in the locus (*pakṣa*) of the inference, its being present only in things similar to the locus, and its being never present in anything dissimilar to the locus. DK goes on to point out that it not only has these

three features but is also of three and only three types,[1] which are the *Anupalabdhi Hetu* (AH), *Svabhāva Hetu* (SH) and *Kārya Hetu* (KH).

In holding that there are three and only three types of *hetus*, DK virtually makes two very important claims namely: (a) that any inference which has any one of the three types of *hetus* is valid, and (b) that no inference which does not have any one of the three types of *hetus* is valid. His theory of inference would be a complete theory of inference if the two claims, (a) and (b), are proven to be maintainable or justified. On the other hand, if either one of them is proven to be unjustified, the theory would thereby be proven to be an incomplete theory of inference. This is so because a theory of inference is a complete theory if and only if all inferences which satisfy its criterion or criteria of validity are valid and any one which does not, is invalid. If there is any inference which satisfies its criterion or criteria but is invalid, or any which does not satisfy its criterion or criteria and is still valid, the theory would be an incomplete theory of inference. Therefore, in making the claims (a) and (b), DK does make the claim that his theory is complete.

The concept of a *hetu*, we have seen, is the same as the concept of a premise. Therefore, to say that there are only three types of *hetus* is, in effect, to say that there are only three types of premises which can make an inference valid. This is equivalent to saying that only three types of propositions can be used as premises in valid inferences. If this is true, then a valid inference would be classifiable either as a *Kārya hetu* inference (KHI) or as a *Svabhāva hetu* inference (SHI), or as an *Anupalabdhi hetu* inference (AHI). Contrariwise, if an inference does not belong to any one of the three types, it would *ipso facto* be invalid. On the other hand, if it is valid even then, it would mean that DK's scheme of classification of valid inferences is incomplete because it does not include in its class of valid inferences all valid inferences. This would mean the same thing as showing that his theory of inference is incomplete.

When DK says that a *hetu* must have three features, he lays down a formal condition for anything to be a logical reason in an inference to infer the existence or non-existence of something in something else, the locus of the inference. When fully stated, the sentence asserting the three features of the logical reason, the *hetu vākya* (HV), is the complete conjunction of *all* the premises of the inference concerned because no

[1]*Trirūpāṇi ca trīṇyeva lingāni.*
SNS, NB, p. 115.10.
Three-featured logical marks are of only three types.

other, or extra, premise is required to draw the conclusion. For example, in the KHI:

> (K_1) There is fire on that mountain
> because
> (a) There is smoke on that mountain, and (b) wherever there is smoke, there is fire, as in a kitchen, and (c) wherever there is no fire, there is no smoke, as in a pond.

The sentence below 'because' is the full statement of the inference's *hetu vākya* and also the complete conjunction of all of its premises. This is the case with any inference whatsoever, no matter whether it is a KHI, an SHI, or an AHI. This is why I say that the concept of a *hetu* is the same as that of a premise. And, this is true not only of DK's logical theory, but of all classical Indian logic.

The conjuncts (b) and (c) of the *hetu vākya* in the above example are equivalent to each other because each one can be obtained from the other by transposition. Therefore, for the sake of brevity, in the other example, I shall give only the corresponding (b) part of the *hetu vākya* concerned, and drop the mention of the (c) part. It should be assumed that the (c) part is always there as an implicate of (b).

Every valid inference must have a *hetu*, or a *hetu vākya*. It also has a conclusion. But DK does not consider the conclusion a necessary constituent of a PA (see Chapter 9), though in an SA it occupies the first position. He does not consider it necessary to state the conclusion in a PA because the *hetu vākya* is fully stated and therefore the conclusion can be taken to have been implied by it, that is, stated in it by implication (*arthatah*), or implicitly. Hence there is no need to state it separately. In SA, the *hetu vākya* is not fully stated but certainly assumed and used. As the central figure in any inference, SA or PA, is the *hetu*, it is quite reasonable for DK to determine the basic typology of inferences on the basis of the basic typology of *hetus*, or of possible *hetus*. This is true not only of the other classical Indian, but also of the non-Indian typology of inferences or arguments.

2. Inference-justifying Relations

Speaking diachotomously, a *hetu* is used to prove in the locus of the inference either the existence or non-existence of something. In (K_1), the example of KHI, the *hetu*, the presence of smoke on the mountain is used

to prove the existence of fire on that mountain. The object inferred, the *sādhya* here is the existence of fire on the mountain which has been perceived to have smoke. In the SHI:

(S_1) This plant is a tree
because
(a) This plant is a *Śiṁśapā* and
(b) Whichever plant is a *Śiṁśapā*, is a tree

the existence of tree-ness is proved in the particular plant, the locus of the inference, which is perceived, or known, to be a *Śiṁśapā*. The object inferred here is the existence of tree-ness in the plant, or simply, the concerned plant's being a tree.

The *hetu*, smoke, in (K_1) is a *Kārya hetu* (KH), an effect of the object inferred, functioning as a logical reason for inferring the existence of the latter, its cause. In (S_1), the *hetu*, being a *Śiṁśapā*, or *Śiṁśapā*-ness, is a *Svabhāva hetu* (SH) for the object inferred, that is, for the concerned plant's being a tree. The plant's being a *Śiṁśapā* functions as a logical reason for inferring its being a tree because to be a *Śiṁśapā* is to be a tree.

According to DK, these two are the only types of *hetu*s which justify the inference of the existence in the locus of that for which they are the *hetus*, for example, the existence of fire on the mountain, and of tree-ness in the plant. This is so because in both cases the *hetu* depends for its existence on the *sādhya*, smoke on fire, and being a *Śiṁśapā* on being a tree. The ways in which they depend on their *sādhya*s are the only two ways in which one thing can depend on another. One thing depends on another for its existence if its existence is brought about by the latter, that is, if it depends on the latter for its origination (*tadupatti*). This happens when it is an effect and the latter is its cause, as is the case with smoke and fire. Every *Kārya hetu* (KH) has this sort of dependence on its *sādhya*.

The second mode of dependence of one thing on another is that in which the existence of the former is partly constituted by or is identical with the existence of the latter. For example, the existence of a plant as a *Śiṁśapā* is partly constituted by or is identical with its existence as a tree. It must be a tree to be a *Śiṁśapā* or for it to be a *Śiṁśapā* is to be tree. When such a relation of dependence exists between the *hetu* and its *sādhya*, the *hetu* is a *Svabhāva hetu* (SH).

DK's reasoning or proof for holding that KH and SH are the only two *hetus* for inferring the existence of a thing, and there is no other, can be schematically presented as follows.

Any x can be a *hetu* for inferring the existence of any y in the locus

only if it depends for its own existence on the existence of y. If x is not in this way dependent on y, then between x and y there cannot be such a relation that x cannot exist unless y exists (*abinābhāva*), and therefore, x cannot be a *hetu* for inferring y. x can depend on y for its existence only in two ways: by being an effect of y, or by being partly, existentially, constituted by, or identical with y. Therefore, there can be two and only two types of *hetus* for inferring the existence of a thing.[2] We can prove either the existence, or the non-existence, of a thing in another. Therefore, in all, there can be three and only three types of *hetus*, two for proving existence and one for proving non-existence.

DK holds, as we have already seen, that the two ways of dependence, x's depending on y in being identical with y, or in being originated by y, are of the same type. I think by saying this he means that they are equally stringent or binding kinds of dependence. That is questionable. If the former is a conceptual relation and the latter an empirical one, as they ordinarily are taken to be, they cannot have the same kind of stringency. However, they are different kinds of relations of dependence even otherwise. When x, the logical reason, has been originated by y, the inferred object, x would be an effect, separable from y, its cause. In the other case, when x is identical with y, it would be inseparable from y. The effect, smoke, is separable from its cause, fire, because it may continue to exist for sometime even after the cause, fire, has been extinguished. But a plant's being a *Śimśapā* is not separable from its being a tree. It is

[2]*Svabhāvapratibandhe hi satyarthoartham gamayeta.*

SNS, NB, 129.19.

Only an object dependent for its existence on another can lead to the (inferential) cognition of the latter.

Tadapratibadhasya tadavyabhicāraniyamābhāvāt.

Ibid., p. 131.20.

Because a thing, which does not depend for its existence on another; cannot have with the latter the relation of not being without that.

Sa ca pratibandhah Sadhyearthe lingasya.

Ibid., p. 133.21.

It is the logical reason which depends in this way on the inferred object.

Vastutastādāmyāt tadupatteśca.

Ibid., p. 134.22.

Because the logical reason is either really identical with, or originated by the inferred object.

Atatatsvabhāvasya tadupattśca tatrāpratibaddha svabhāvatvāt.

Ibid., p. 136.23.

The logical reason, which is not identical with, or originated by, the inferred object, cannot have with the latter the relation of not being without that (i.e. the relation which is the necessary condition for the logical reason's implying the inferred object).

not separable even in thought. Because to exist as a *Śimśapā* is to exist as a tree also, to think of a plant as a *Śimśapā* is to think of it as a tree as well.

A *Śimśapā* is certainly a tree, but being a *Śimśapā* is not wholly identical with being a tree. All *Śimśapā*s are trees but all trees are not *Śimśapā*s. The relation between being a *Śimśapā* and being a tree can be said to be one between a species and its genus, or between a sub-class and the class which includes it. To be a *Śimśapā* is to be a tree and to be different from all other trees which are not *Śimśapā*s. Therefore, tree-ness can be said to be a part or constituent of being a *Śimśapā*. The dependence of x's being a *Śimśapā* on its being a tree, therefore, is the dependence of the whole or a part of it, or that of the constituted on a constituent of it. It is not, thus, a relation of complete identity between the two. At the most, it can be called one of partial identity in the sense that treeness, which is a part or constituent of being a *Śimśapā*, is identical with the treeness which is a general feature of any plant's being a tree. When DK calls this relation one of *tādātmya* (identity), he must be meaning only a relation of partial identity and not complete identity. It seems to me that a better way to designate it would be to call it a relation of constitutional dependence, the dependence of the constituted on a constituent of it.

3. Proof of Completeness: Independence and Exhaustiveness of *Hetu*s

One part of DK's proof of the completeness of his theory of inference consists in his proof of the independence of his three *hetu*s, namely, the proof that the three *hetu*s are independent of each other and the other consists in the proof that no other *hetu* is required to make any inference valid. The completeness of the typology of *hetu*s would also mean the completeness of his theory of inference because the typology of inference is determined by that of the *hetu*s. Both the parts are elaborated by DU in explaining DK's assertion that there are two and only two *hetu*s, KH and SH, for inferring an affirmative existential proposition, and one and only *hetu*, AH, for inferring a negative existential proposition. The relation between a KH and its *sādhya* is different from that between an SH and its *sādhya*. Therefore, KH and SH are two different *hetu*s though each one is used to infer an affirmative existential proposition. An AH is used, on the other hand, to infer a negative existential proposition. The relation between it and its *sādhya* is also different from the relation between a KH and its *sādhya*, as well as from that between an SH and its *sādhya*. Therefore, it is different from both of KH and SH. Since the conclusion of an inference is either an affirmative existential, or a negative existential proposition,

no other *hetu* is needed. Therefore, there are three and only three *hetus*, and consequently there are only three basic types of inferences. This is in brief DK's proof of completeness. I shall dilate on it in what follows:

KH and SH are the only two *hetus* for inferring an affirmative existential proposition asserting that something exists in another thing, or at a certain place, etc. This is the case because there are only two modes of dependence between things which justify inferring, using the existence of the dependent as a *hetu*, the existence of that on which the *hetu* depends for its own existence. The existence of one thing justifies the inference of the existence of another only when the former depends for its existence on the existence of the latter. It can so depend on the latter if it is an effect of the latter or is partially identical with the latter being a species of, or partially constituted by, the latter. In the first case, it is a KH, and in the second an SH. Both KH and SH entail their *sādhya* on which they depend for their existence, though, in two different ways. The property of being existentially (partially) identical with the *sādhya* (*tādātmya*) resides in the SH and the property of having been originated or caused by the *sādhya* (*tadutpatti*) in the KH.[3] The property of being a tree, that is, that of being partially identical (*tādātmya*) with that of being a tree, the *sādhya*, resides in the SH, the property of being a *Śimśapā*, and thereby shows the existential dependence of the *hetu*, being a *Śimśapā*, on the *sādhya*, being a tree. Similarly, the property of having been originated, or caused (*tadupatti*) by fire, the *sādhya*, resides in the KH, smoke, proving the existential dependence of the latter on the former.

The two *hetus*, KH and SH, are different from, or non-reducible to, each other because the relation of dependence between the effect and its cause is different from, or non-reducible to, the relation of dependence between the species and its genus (or the whole and a part of it, or the constituted and a constituent of it). Therefore, any inference with an affirmative existential conclusion is either a KHI, or an SHI, that is, an inference having a *Kārya hetu*, or a *Svabhāva hetu*.

KH and SH are, thus, two *different* types of logical reasons, according to DK and DU, because the relation of a KH to the inferred object is one of having been originated or caused by the latter, and the relation of an SH to the inferred object is one of being partially identical with the latter. From the examples given by DK, it may seem that the relation between

[3]*Te ca tādātmyatadupattī svabhāvakāryayoreveti tābhyām eva vastusiddhih.*
SNS, NB, p. 138.24.

(Because) the property of being identical with and that of being originated by, reside only in a complex property and in an effect (respectively), by the use of only these two logical reasons (SH and KH), the existence of anything can be proven (i.e. inferred).

an SH and its *sādhya* is stronger than that between an effect and its cause. But in DK's theory, the contrary is the truth. Being a *Śimśapā* implies being a tree, but being a tree does not imply being a *Śimśapā*. On the other hand, an effect implies, as we have seen, its effective cause (that is, a cause with unobstructed capability to produce it) and an effective cause implies its effect. Therefore, the causal relation, that is, one between a KH and the inferred object is stronger than that between an SH and the inferred object. Since the two relations are different, the two *hetus* are different.

There are also valid inferences in which the non-existence of things are inferred. It is to account for these inferences that DK has formulated his concept of *Anupalabdhi hetu* (AH), the basic type of AH is that in which the non-perception of x is the logical reason for inferring the non-existence of x in a context constituted by the fact that x is a perceivable object and all necessary conditions other than its existence, for its perception, are assumed to have been satisfied. We have seen that any x is perceivable if it is an object which is necessarily perceived if it exists and all other necessary conditions, which may be called auxiliary conditions for its perception, are satisfied. This, DK's definition of a perceivable object, we symbolized in V.2 as

D1: (x) [(Ex. On) ⊃ Px].

Therefore, to say that the non-perception of x, (~Px), is a logical reason for inferring the non-existence of x, (~Ex), is really to say that if [(Ex. Ox) ⊃ Px]. Ox, then ~Px ⊃ ~Ex. Here it is assumed that x is a kind of object which would have been perceived if it were there. Since AH is a reason for inferring the non-existence, and not the existence, of x and its relation to the inferred object is different from the relations of KH and SH to their inferred objects, it is a third kind of logical reason different from each one of KH and SH. And, the three taken together constitute a complete set of logical reasons because they account for inferring both the existence and non-existence of things, that is, both kinds of *sādhyas*, positive and negative.

It is worth noticing that, in the context assumed in the use of AH. Ex (There is x, or x exists), also implies Px (x is perceived to be there), as shown below:

1	[(Ex. Ox) ⊃ Px]. Ox	(context)
2	(Ox. Ex) ⊃ Px	1, Comm. and Simp.
3	Ox ⊃ (Ex ⊃ Px)	1, Exp.
4	Ox	1 Simp.
5	Ex ⊃ Px	3, 4 MP.

From Ex ⊃ Px we can get ~Px ⊃ ~Ex by transposition. This is what the doctrine of AH claims. The context assumed, as we have seen, is nothing but a statement of the common sense understanding of a perceivable object, or of the conditions of perception, which link in a logical way the perception of an object with its existence. And, this can be taken as DK's justification of his doctrine of AH, or of AHI.

This justification is doubly fortified when we realize that Ex and Ox together not only constitute the sufficient but also the necessary condition for the perception of x. That is, if x exists and all other auxiliary conditions of its perception are fulfilled, it is not only the case that it is necessarily perceived but also that if it is perceived, these conditions must have been fulfilled. Therefore, we can say that not only (Ex. Ox) ⊃ Px, but also that Px ⊃ (Ex. Ox). The latter too is commonsensical, as we say that to perceive an object means that it exists and the other conditions of its perception are fulfilled. Even formally Px ⊃ (Ex. Ox) is equivalent to (Px ⊃ Ex). (Px ⊃ Ox). The latter only makes explicit that, since Px implies both, it implies each one of them. Therefore, in the common sense context of perception, which is DK's context, when the auxiliary conditions of an object's perception are taken to have been fulfilled, its perception implies its existence, and its non-perception implies its non-existence. DK asserts the latter in his doctrine of AH and AHI, as he needs to. He does not assert the former though he could very well have asserted it too.

What justifies the use of KH and SH is thus clearly the relation of dependence between each one of them on its *sādhya*. When x depends on y, then y constitutes the necessary condition of x in so far as x cannot exist without y. That is, it is not possible that x exists and y does not, which is what we mean by saying that the existence of x implies the existence of y. In the case of AH also, a similar situation prevails, though it may not be visible at first glance. The existence of a perceivable x is one necessary condition for its perception, the other being the set of auxiliary conditions. Therefore, when the latter is assumed to have been fulfilled and still x is not perceived, its non-perception can be attributed only to the non-fulfilment of the remaining necessary condition, namely, to its non-existence. That is, its non-perception implies its non-existence, the negation of a necessary condition of perception, since the remaining set of necessary conditions of perception is fulfilled. Or, we can say that the non-satisfaction of either one of Ex or of Ox is the necessary (as well as the sufficient) condition of the non-perfection of x. Therefore, when Ox is taken to be satisfied, the non-satisfaction of Ex, ~Ex, that is, non-existence of x, becomes the sole necessary (as well as the sufficient) condition of the non-perception of x. Thus, in an AHI,

when we infer the non-existence of x from x's non-perception, the *hetu*, here too we infer its necessary condition, as we do in KHI and SHI. Therefore, the concept of a necessary condition is at the centre of DK's theory of all the three types of logical reasons, KH, SH, and AH, or of all the three types of inferences, KHI, SHI, and AHI.

The above discussion has shown that DK's claim that the three *hetus* are independent of each other may be accepted as justified. We can also accept his claim that each one is validity-ensuring because an inference, in which anyone of them occurs and is properly used is valid. But his claim that they are the only three *hetus* needs to be probed into in some detail. At this point, it would be only necessary to remember that if this claim is not maintainable, his theory of inference would not be complete, even if his other claim, or claims, are maintainable.

His theory would be complete if and only if (a) any inference in which any of the three *hetus* occurs is valid and (b) in every valid inference one of the three occurs. His assertion that there are only three types of *hetus* makes the claim (b). It is possible that (b) is not valid even when (a) is. (b) can be proved to be unmaintainable if we can locate an inference which is valid but does not contain any one of DK's three *hetus*. To do that would also amount to proving the incompleteness of his theory of inference. This is possible even if the three *hetus* are independent of each other. The issue of the independence of *hetus* is different from that of their exhaustiveness. (b) means that the three *hetus* exhaust the list of permissible *hetus*, while (a) means that they are independent of each other. Since we have accepted (a) we would examine only (b).

As has been shown, the complete conjunction of the premises of an inference is the complete statement of its *hetu*, its *hetu vākya* (HV). To say that there are only three types of *hetus* is thus, to say that the HV of a valid inference must be either a statement of a KH, a *Kārya hetu vākya* (KHV), or one of an SH, a *Svabhāva hetu vākya* (SHV), or one of an AH, an *Anupalabdhi hetu vākya* (AHV). Therefore, according to DK, an inference would be valid, only if the conjunction of its premises, its HV, is either a KHV, or SHV, or AHV. This would be a formal condition of validity required to be satisfied by all inferences in order to be valid. To illustrate the three types of HV's, 'There is smoke on the mountain and wherever there is smoke, there is fire' is a KHV, 'This plant is a *Śimśapā* and whatever is a *Śimśapā*, is a tree' an SHV, and 'No jar is perceived to be there, though it is a perceivable object and all auxiliary conditions of its perception are fulfilled, and whatever is not perceived to be at a certain place, though it is a perceivable object and all auxiliary conditions of its perception are fulfilled, it does not exist there', an AHV.

It is not difficult to locate an instance of a valid inference the conjunction of whose premises is neither a KVH, nor an SVH, nor an AHV. For example, in:

> (R_1) Dharmakīrti is a great logician.
> Therefore, a critic of Dharmakīrti
> is a critic of a great logician,

the conclusion is an affirmative proposition validly drawn from its premise which is neither a KHV nor a SHV. In the inference:

> (R_2) Dinganāga died earlier than Dharmakīrti
> Therefore, Dharmakīrti did not die
> earlier than Dinganāga;

the conclusion is a negative proposition but the premise is not an AHV. Neither (R_1) nor (R_2) can be proved to be valid in DK's logic, or using DK's typology of *hetus*, though each one is a logically impeccable, valid, inference. Therefore, one may say that here is a counter-instance to DK's definition of validity, or conception of a valid inference, an instance which is valid though it does not have any one of DK's three *hetus*. Therefore, he may conclude, DK's theory of inference is not a complete theory.

4. Completeness within a Limited Zone

In a sense, the validity of (R_1) and (R_2) is not provable in DK's logic, and the above is a proof of its incompleteness. But it does not mean that it is not at all a viable venture. (R_1) and (R_2) are relational inferences and DK's rules of inference, the rules of KH, SH, and AH, seemingly are not meant to apply to, or cover, relational inferences, that is, inferences which contain at least one relational proposition in the set of its premises. It seems to me that his theory is intended to cover only the logic of inferring non-relational, empirical, existential propositions, positive and negative. A KH proves the *existence* of a cause–object from that of an effect–object, an SH proves the *existence* of a property in the locus already contained in it because of the presence of the *hetu* in it, and an AH the non-existence of a perceivable object in the locus from its non-perception there, etc. 'This mountain has fire', 'This plant is a tree', 'There is no jar at that spot', all are existential, non-relational, propositions. Therefore, if we take his theory of inference as having a limited objective of accounting for the validity of non-relational inferences with empirical, existential

propositions as their conclusion, then it can be said to be a complete theory. It would then be, definitely, a theory about a limited zone of logic, but still in no way unimportant because of its having been developed by DK in an extremely illuminating manner.

The conclusions of DK's illustrative inferences, almost all of them, are not only empirical and existential, but interpretable as singular as well if we look closely at their semantics, or their contextual meaning. For example: 'There is no jar at that spot', 'This plant is a tree', or 'This mountain has fire', all have as their locus a particular, singular, individual, place or object, 'That spot', 'This plant', 'This mountain', etc. Even in the conclusion 'Sound is uneternal' because 'It is produced (by a human effort) and all that is produced is uneternal', 'sound' is used to denote a particular, singular, substance, and not to denote the totality of all individual sound-events. DK's, or Buddhists', not believing in the reality of classes also supports this interpretation. Moreover, the *pakṣa vākya*, the sentence asserting the presence of the *hetu* in the locus (*pakṣa*), is almost always, a perceptual proposition. 'No jar is seen at that place', 'This plant is a *Śimśapā*', 'This mountain has smoke', or even 'Sound is produced by a human effort', are perceptual propositions. Unless the locus, in which the presence of the *hetu* is perceived, is admitted to be a singular particular thing, the *hetu*'s presence in it cannot be perceived. We do not perceive the presence of something, or the absence of it, in a class because a class itself is not a perceivable thing. It is the locus of which something is denied, or affirmed in the conclusion. This means that the conclusion and the *pakṣa vākya*, both are singular existential sentences. They are also empirical because both the *pakṣa* and the *sādhya* in the conclusion, and *pakṣa* and *hetu* in the *pakṣa vākya* are empirical things or qualities. The *pakṣa*s, that place, this plant, this mountain, sound, etc. are empirical things; so are the *hetus*,—non-perception of a jar, this plant's being a *Śimśapā*, smoke being produced by a human effort, etc., and the *sadhyas*—non-existence of a jar, this plant's being a tree, fire, and uneternality of the sound (or its coming to exist, or to an end), etc. Only the second and third conjuncts of the HV, which are logically equivalent, are universal propositions.

It is for these reasons that DK's logic is that of inferring a singular, empirical, existential proposition from its HV, and it is a logic of deductive inference because the conclusion in each case, as I have shown, formally and logically follows from the HV. As is true of any valid deductive inference, the hypothetical statement, constructed by using the HV as the antecedent and the conclusion as the consequent of any inference,

having any one of the three sorts of *hetus* is a tautology. This has been already shown for AH in Chapter 5.3. For the other two, I shall give the following demonstrations.

Using 'Tx' for 'x is a tree', 'Tx. Sn' for 'x is a particular kind of tree called *Śimśapā*', the SHI;

x is a tree
because
x is a *Śimśapā* and whatever is a
Śimśapā is a tree,

can be put in the form of this hypothetical:

1. $(x)\ [[(Tx.\ Sx).\ \{(Tx.\ Sx) \supset Tx\}] \supset Tx.]$

This is an obvious tautology provable in only a few steps:

2. $[[(Tx.\ Sx).\ \{(Tx.\ Sx) \supset Tx\}] \supset Tx]$	By removing quantification from 1
3. $(Tx.\ Sx).\ \{(Tx.\ Sx) \supset Tx\}\ /\therefore\ Tx$	2 CP.
4. $Tx.\ Sx$	3 Simp
5. Tx	4 Simp.

Using 'Sx' for 'x has smoke', 'Fx' for 'x has fire', the KHI,

x has fire
because
x has smoke and whatever has smoke
has fire,

can be put as the following conditional:

1. $(x)\ [\{(Sx.\ (Sx \supset Fx)\} \supset Fx]$

These tautologies can be proved as follows:

2. $[Sx.\ (Sx \supset Fx)] \supset Fx$	1 By removing quantification from
3. $Sx.\ (Sx \supset Fx)\ /\therefore\ Fx$	2 CP
4. Sx	3 Simp.
5. $Sx \supset Fx$	3 Do
6. Fx	4, 5, MP.

5. The Principle behind the Typology of *Hetus* and Inferences: Some Difficulties in its Application

The basic, broadest, classification of *hetus*, according to DK, is, thus, into the positive and the negative, the positive consisting of KH and SH, and the negative consisting only of AH, resulting into the classification of inferences into KHI, SHI, and AHI. It has been done on the basis of the nature of the *sādhyas* which can be called the objectives of the *hetus*. The objective of a *hetu* is to prove in the *pakṣa* the existence or non-existence of something, and nothing else, because there is nothing else between the two. A *hetu* which proves in the *pakṣa* the existence of something is, we have seen, positive (*bhāvātmaka*) and one which proves in it the non-existence of something is negative (*pratisiddha*). The *hetus* are so classified, says DU, according to the form of their *sādhyas*, and not according to their own form because a *hetu* is a means to proving that its *sādhya* is true of the *pakṣa*. A *sādhya* is of primary importance and a *hetu* only of secondary importance.[4]

An ambiguity about the identity, or individuation, of a *sādhya* needs to be clarified here. When a KHI proves the existence of fire on a hill, using the existence of smoke there as the *hetu*, or an AHI proves the non-existence of a jar in a room using the non-perception of any jar there, how is the *sādhya* in these inferences to be individuated or designated? In the case of the KHI, should we say that its *hetu*'s *sādhya* is fire, or, the existence (or presence) of fire? Similarly, in the case of the AHI, should we say that its *hetu*'s *sādhya* is any jar, or, the non-existence (or absence) of a jar? If we say that in the former it is fire, then we would have to say that the *hetu* establishes the existence of its *sādhya* in the *pakṣa*. *Pari passu*, we would have then to say that in the latter it is a jar and its *hetu* establishes the non-existence of its *sādhya* in the *pakṣa*. But then we would

[4]*Atra dvoi vastusādhanoi. Ekah pratisedhahetuh.*

SNS, NB, p. 127.18.

Of these (three *hetus*), two (*Svabhāva* and *Kārya hetus*) are means to proving existence and one (*Anupalabdhi*) to proving non-existence.

Hetuh sādhyasiddhyarthatvāt sādhyāngam,
sādhyam pradhānam. Atah sādhyopakaraṇasya
hetoh pradhānasādhyabhedād bhedah, na svarūpabhedāt.

SNS. NBT, p. 128.

A logical reason (*hetu*) is meant for proving its objective, the inferred object (*sādhya*). Therefore, it is a part of the latter (*sādhya*) and the latter (*sādhya*) is primary (or the main thing). Thus, because *hetus* are parts of, or means to, their objectives (*sādhyas*) they are distinguished on the basis of their different objectives (*sādhyas*) which are the primary things, and not on the basis of their own forms.

be attributing to its *hetu* a role contrary to its nature, that is, contrary to what a *hetu* is meant to perform. A *hetu*, says DU, is a means (*sādhana*), a ground, or a logical reason, for establishing or proving that the *pakṣa* has the *sādhya*, and not one for doing the opposite which it would do if it proves that there is no jar in the room, that is, that the room has no jar. Therefore, to no *hetu*, even to an AH, we can attribute the role of proving the non-existence of its *sādhya* in the *pakṣa*. A *hetu* which does it would be a defective, or a pseudo-*hetu*, a *hetvābhasa*, a term which occupies the place of the *hetu* in the inference without really being one. The technical name of such a deceptive *hetu* is *Viruddha hetu*, a *hetu* which does the opposite of what it ought to do.

If on the other hand, we individuate the *sādhya* of the *hetu* of the KHI as the existence of fire and the *sādhya* of the *hetu* of the AHI as the non-existence of any jar, then, we can say that both the *hetu*s establish their respective *sādhya*s in their respective *pakṣa*s. By adopting this mode of individuating the *sādhya* of a *hetu*, we would be making intelligible the basic stand of DK and DU that any *hetu* is a *sādhana*, a *gamaka*, that is, an agent or instrument, which leads the inferer to its (and to his) objective, the *sādhya*. This is their general definition of the concept of a *hetu*.

But there would be a problem, then, with their classification of inferences into positive and negative, including KHI and SHI in the former and AHI in the latter. This classification is based on their way of distinguishing between a positive and a negative *hetu*. We have seen that a *hetu* (and therefore an inference) is negative (*abhāva rūpa*) if the *sādhya* it establishes in the *pakṣa* is negative. Therefore, DK cites the inference:

(K_2) There is no smoke here
because
There is no fire here,

as an example of AHI, calling it *Kāraṇānupalabdhi*, that is, an inference in which the absence of an effect is inferred from the absence of its cause.[5]

Proceeding on the same track he cites the inference:

(S_2) This is not a *Śimśapā*
because
This is not a tree,

also as an example of AHI, naming it *Vyāpakānupalabdhi*, that is, an inference in which the negation that a thing does not belong to a species is

[5]SNS, NB, p. 168.39.

inferred from the negation of the thing's belonging to the genus of that species.[6]

Taking (K_2) first, the principle involved, or used in the inference is that the absence of the effect can be inferred from the absence of the cause. This principle is the transpositive of, and therefore equivalent to the principle that the presence of the cause can be inferred from the presence of the effect. The latter is the principle of KHI. Therefore, (K_2) can very well be called an instance of KHI, or a corollary of KHI. If we use the term 'causal inference' in a broad sense denoting both, the inference of the presence of a cause from that of its effect and the inference of the absence of an effect from that of its cause, we can say that both (K_1) and (K_2) are instances of the same kind of inference. DK offers (K_1) as an instance of KHI, and (K_2) as one of AHI claiming thereby that the two are instances of two different kinds of inferences. What I want to say is that they are different but not so different as to be called two different *kinds* of inferences. The same is the case with S_2, which DK offers as an instance of AHI, and S_1 which he offers as one of SHI. In (S_2) the principle of inference used is to the effect that a thing's not belonging to a species can be inferred from its not belonging to the genus of that species. This principle is the transpositive of, and therefore equivalent to the principle of SHI, the principle that a thing's belonging to a genus can be inferred from its belonging to a species of that genus. Therefore, S_2 also, like S_1 can be called an instance of SHI because the mere fact of a thing's being what it is, that is, its not belonging to a genus, its not being a tree, is a *hetu* for its not belonging to a species of that genus, for its not being a *Śimśapā*, just as in (S_1), the mere fact of a thing's being what it is, that is, its belonging to a species, its being a *Śimśapā*, is a *hetu* for its belonging to the genus of that species, for its being a tree.

But DK treats (K_2) and (S_2) both, as instances of AHI. The reason for his doing that, DU says, we have seen, is that he uses the form of the *sādhya* to determine the designation of its *hetu*. Since the *sādhya* in both (K_2) and (S_2) is negative, the *hetu* in both of them is an AH. Since their *hetu* is an AH, they are called instances of AHI, as inference-types are determined on the basis of *hetu*-types. What I have been trying to illustrate above is that if the principle of inference operative in an inference is used to determine its logical type, (K_2) would be a variety of causal inference, and (S_2) one of SHI. DK is not unaware of this way of classifying an inference. He himself uses the principle—that the existence of a thing

[6]Ibid., p. 157.33.

can be inferred from the existence of another only if the latter depends on the former—as the basis of calling both KHI and SHI positive inferences. He also treats them as *two* different types of positive inferences because the relation of dependence of the *hetu* on the *sādhya* in KHI is one of causation or origination (*tadutpatti*) and in SHI it is one of inclusion or partial identity (*tādātmya*). Therefore, it seems, he uses the operative principle of inference in the characterization of a positive inference, and the form of the *sadhya* in characterizing and classifying AHI's, that is, inferences whose *sādhya* is the non-existence of something in their *pakṣa*.

But there is a principle common to all the three types of inferences, AHI's, SHI's and KHI's, namely that in any valid inference, the thing inferred (*anumeya* or *sādhya*) is the necessary condition of the *hetu* of the inference. For example, when in an AHI, we infer the non-existence of a perceivable object, say, a jar at a particular place, using non-perception of any jar there as the *hetu*, the non-existence of a jar there is a necessary condition of the non-perception of any jar there. The existence of a jar at a place and the satisfaction of a set of auxiliary conditions, like availability of adequate light, are, we have seen, the two sets of conditions necessary for the perception of a jar there. Therefore, (a) the non-existence of any jar there, or (b) the non-satisfaction of any one of the auxiliary conditions for the perception of a jar if it were there, is a necessary condition for the non-perception of a jar there. In the use of an AHI, all the auxiliary conditions necessary for the perception of a jar are satisfied, which means that the fulfilment of (b), that is, of the non-satisfaction of any one of the auxiliary conditions necessary for the perception of a jar there is out of the question. Therefore, from the non-perception of a jar there, we infer the non-existence of a jar there, the remaining condition necessary for the non-perception.

Similarly, in an SHI, using a plant's being a *Śimśapā*, for example, as the *hetu* in it, we infer that the plant (which is a *Śimśapā*) is a tree because being a tree, the *sādhya*, is a necessary condition for any plant to be a *Śimśapa*. Being a tree is a necessary condition of the *hetu*, being a *Śimśapā*, because it is a constituent of the latter. When we look at the working of a KHI, the operativeness of the principle is still more obvious. We infer, for example, the existence of fire on a hill using the existence of smoke there as the *hetu*. This also we do because the existence of fire, the *sādhya*, at a place is a necessary condition for the existence of smoke there, the *hetu* of the inference. Thus, no matter whether the *sādhya* is positive or negative in an inference, it is validly inferred from the *hetu* of the inference because it is a necessary condition of the latter. To put it a little differently,

a *hetu* is a *linga* (a logical mark) of, or a *gamak* to (a carrier to), only that which is a necessary condition of its being what it is, that is, it can take us in a valid way only to that without which it cannot be what it is.

It is because the *sādhya* is a necessary condition of the *hetu* in all the AHI's, SHI's, and KHI's, that in any instance of any one of them, the *hetu vākya*, the conjunction of its premises, entails, or necessarily implies its conclusion, and therefore the inference is deductive. The common way of describing the nature of the bond between the premises and the conclusion of a deductive inference is that if its premises are true and it is valid, its conclusion must be true. DK (and all other classical Indian logicians) make a stronger claim about the truth of the conclusion. In the framework of their theory of inference, all the premises have to be true. Therefore, what they claim is that (*since* the premises of an inference have to be true), the conclusion of a valid inference (*anumāna*) must be true. This is the point which DK makes when he says that *anumāna* gives, or is, *samyak jñāna*, that is, knowledge uncontradicted by experience (*avisamvādaka*). The requirement that the premises of any *anumāna* must be true will be discussed in some detail in the chapter that follows.

TEN

Inference for Someone Else (Parārthānumāna)

1. Inference for Someone Else as Essentially Linguistic

Inference for someone else (*Parārthānumāna* [PA]), like inference for oneself (*Svārthānumāna* [SA]), is a form of right knowledge. It is essentially linguistic in the sense that it has to be verbalized. DK defines it as the verbal presentation, or statement of the three-featured logical mark (*trirūpa linga*)[1] meant for another person. This statement, the *hetu vākya* (HV) is a complete statement of the *hetu*, that is, a complete conjunction of the premises. The characterization of the *hetu*, of its varieties, and therefore of the main forms of inference, given by him in the discussion of PA, is the same as what he has given in that of SA. Since I have discussed and commented on the latter in detail in the earlier chapters, I shall deal with his treatment of PA generally in a comparatively briefer way. That his treatment of these logical things is the same in his adumbration of SA and PA confirms the point, which I have tried to make, that, as far as the logic of inference is concerned, the division of inference into SA and PA does not matter much.

DK does not consider it necessary to mention in a PA the conclusion which follows from the HV. DU says that the assertion of the three-featured logical mark to the addressee by the inferer produces in the

[1]*Trirūpalingākhyānam parārthānumānam.*
SNS, NB, p. 186.1.
The statement of the three-featured logical mark is inference for someone else.

former's mind a recollection of the logical mark and from that recollection he draws the relevant conclusion. What is necessary is that in order to draw the conclusion he must know the logical mark either by dint of his own efforts, or as a result of another person's assertion to him of what it is. Therefore, to enable someone to draw the right kind of conclusion, that is, to have the relevant inferential cognition, it is necessary to state the three features of the relevant logical mark. This can be done only by putting in clear words before him what this three-featured logical mark is. That is why PA has to be a verbal presentation of the HV.[2]

What DU says at this place is right but not completely right. He describes the drawing of the conclusion from the HV in a manner which suggests that it is a psychological occurrence in the mind of the addressee caused by the recollection of the relevant logical mark, aroused in him by the assertion of the HV to him. Drawing a conclusion is not a causal process, not just a memorial act, but an intentional one which only he can do who has the rational maturity to know what the HV implies, that is, what he is logically required to accept when he accepts the HV. To me it seems that DK does not consider it necessary to mention the conclusion, the logical consequence of the HV, because he assumes that the addressee of the HV has the logical acumen to draw the right implication of the HV. One offers a PA, according to him, to demonstrate the truth of a proposition he is himself convinced of. A demonstrative exercise can be meaningfully indulged in with a person only if he possesses a certain level of logical maturity which enables him to smoothly draw the conclusion which follows from the HV asserted to him, and then there would definitely be no point in mentioning it separately after asserting the HV.

A little later in the discussion, after having given the various forms of the two broad divisions of PA into *Sādharmyavat* and *Vaidharmyavat*, that is, into those which have an affirmative *vyāpti* asserting a necessary relation between the presence of the *hetu* and the presence of the *sādhya* (for example, between the presence of smoke and that of fire) and those which have a transpositive asserting a necessary relation between the absence of the *sādhya* and the absence of the *hetu* (for example, between the absence of fire and that of smoke), DK says that it is not necessary for the demonstrator of a PA of any form to mention its conclusion after having stated the HV. The conclusion is nothing but what the HV implies, or yields by implication, and what it does is amply clear.[3]

[2]SNS, NBT, pp. 187–88.

[3]*Dvayorapyanayoḥ prayogayo nārvaśyam pakṣanirdeśaḥ.*
SNS, NB, p. 231.34.

The complete statement of the three-featured logical reason, which for DK, a PA is, does not include the conclusion. For example,

> 'Wherever there is smoke, there is fire, as in a kitchen', 'Wherever there is no fire, there is no smoke, as in a pond', and 'There is smoke on that hill',

is a complete verbal formulation of a three-featured logical mark and therefore an impeccable PA. But there is no mention of the conclusion in it, though obviously it is 'Therefore, there is fire on that hill'. By saying that *it is not necessary to mention it*, DK intends to convey that the formulation of a PA is from the logical point of view, complete when the HV is stated without the conclusion. Therefore, the conclusion does not constitute a necessary component of the verbal formulation of a PA, though, if it is expressly mentioned in any case, that would not make the formulation defective just for that reason. DU, while elaborating on this claim of DK takes 'it is not necessary to mention the conclusion' '(*nārvaśyam pakṣanirdeśah*)' as equivalent to 'it is necessary not to mention the conclusion' (*pakṣoavśyam eva na nirdeśyah*), which is much stronger than what the former means. Thereupon he goes on to say that the conclusion must not be mentioned.[4] But this is not correct. 'Not necessary to' is not synonymous with 'necessary not to'. If DU's interpretation is accepted, then an otherwise impeccable PA, like the above, would become defective if the demonstrator also mentions the conclusion when he finds that the demonstratee is not able to draw what the HV implies. In fact, sometimes it may be necessary to do that when the HV is so complex a formulation that what it implies is not too obvious to see, or when the demonstratee is not so sharp-minded as to see, without any assistance from the demonstrator, what its right implication is. DK's own version of the dispensability of the conclusion accommodates these possibilities. But DU's interpretation of it does not. DK's does that because his expression *'prayogayo nārvaśyam* (= *prayogayoh na avaśyam*) *pakṣanirdeśah'* unambiguously means 'in the uses of both (the forms of PA, SPA and VPA) the mention of the conclusion is not necessary'.

In the use of both of the forms (*Sādharmyavat* and *Vaidharmyavat* PA's) it is not necessary to mention (indicate) the conclusion. (*Pakṣa'* here means the conclusion of the inference, the implicate of the HV, and not the locus as it usually does—Author.)

[4]... *tasmāt pakṣoavaśyam eva na nirdeśyah.*

SNS, NBT, p. 232.

Therefore, in them (all forms of PA) it is necessary not to mention (indicate) the conclusion.

(Here too *'pakṣa'* means the conclusion—Author.)

If stating the HV to another person to generate in him the inferential cognition of its conclusion is called *parārthānumāna*, then, it may be urged, on perceiving a cow at a certain place, telling another person that there is a cow there, to enable or motivate him to perceive the cow there, should also be called *parārtha pratyakṣa* (perception for another person). Therefore, one may say that to classify inferences, but not perceptions, into two kinds, *svārtha* and *parārtha* (for oneself and for another person) is wrong. Neither Buddhism, nor any other school of classical Indian philosophy, classifies perceptions into these two kinds. Dignāga's reply to the above objection is that since a perception cannot be expressed in language, and PA is a linguistic presentation, no perception can be called perception for someone else.[5] But this reply does not meet the objection. Only *nirvikalpaka pratyakṣa*, no-concept-involving perception, or pure sensation of point-instants (*svalakṣaṇa*), is, for Dignāga and other Buddhist philosophers, unverbalizable. But concept-involving perception, that is, ordinary, normal, perception is verbalizable, and it is perception as ordinarily understood which DK talks about when he classifies knowledge into two kinds, perceptual and inferential. Such perceptions are verbalizable unlike pure sensations and the objection is about the former not having been classified into *svārtha* and *parārtha*.

Durbeka Miśra's reply to the objection seems to be quite satisfactory, in view of the logical-epistemological framework of Buddhism and that of other schools. He points out that in PA the statement or linguistic presentation of the HV which is merely the conjunction of the premises is the material (*sāmagrī*) which, when supplied to another person, generates in him the inferential cognition of the conclusion. The materials which generate a perceptual cognition, say, a visual perception of an object are such things as light, visual sense organs, and the object's presence. No statement, or linguistic account of these conditions, can generate the visual perception of any object. Therefore, there is no point in calling any perception as perception for someone else as we call an inference, inference for someone else.[6]

PA is inference for someone else when by means of an HV presented by another one can draw the conclusion from it for oneself, that is, thereby he himself acquires the inferential cognition. No linguistic account of the materials which make a perception possible can generate in him, or enable him to himself have, the perception of the object concerned. As

[5]Ibid., p. 98.
[6]Ibid., p. 98.

the *Mahābhārata* says, Sanjaya, having been given by Vyāsa the divine power to see the actual fighting going on at the battlefield of Kurukṣetra, without actually being there, sees the combat with the sole purpose of reporting it to the blind King, Dhṛtrāṣtra. But his perception of the fighting is yet not like an inference for someone else because his verbal report of it to Dhṛtarāṣtra remains merely a report and does not enable the latter to himself see what goes on on the battlefield.

2. Twofold Division of Inference for Someone Else

DU confirms[7] that the nature of the *hetu* has been well-explained by the master while discussing the working of SA. Since its role is the same in SA and PA, it does not need to be reiterated when he explains the working of PA. But the verbal formulation (*pratipādaka śabda*) of the *hetu*, the HV in PA, needs to be discussed because it is central to it, and also because it is not explicitly mentioned by the inferer to himself when he makes an SA. We have seen that if h stands for the *hetu*, p for the *pakṣa*, s for the *sādhya*, and e and f for two contrary examples, the complete verbal formulation of an HV would be:

> (a) Whatever has h, has s, for instance
> e, and (a_1), whatever does not have s, does
> not have h, for instance, f, and (b) p has h.

We have also seen that (a) and (a_1), the first two conjuncts of the above HV, are equivalent, and therefore even the mention of any one of them and (b) is sufficient to make visible the conclusion the HV entails. (a) and (a_1) are different only in their verbal or syntactical form (*prayoga vedāt*). Since an HV could be formulated as (a) and (b), or as (a_1) and (b), in order to present the same PA, DK divides PA's into two forms which he names *Sādhrmyavat* and *Vaidharmyavat*, simply on the basis of the verbal difference between the two (a) and (b), and (a_1) and (b), because, in point of logic, the two are equivalent and entail the same conclusion.

[7]*Tatra svarūpaṃ svārthānumāne vyākhyātam.*
Pratipādakaśca sśbda iha vyākhyeyah.
Ibid., p. 188.
Of them (the nature of the logical mark and of its verbal formulation), the nature of the logical mark has been explained in explaining inference for oneself. The nature of the verbal formulation of the logical mark is to be explained here (in the discussion of the nature of inference for someone else).

3. Similarity-based (*Sādharmyavat*) and Dissimilarity-based (*Vaidharmyavat*) Inference for Someone Else

An example of a similiarity-based PA (SPA) would be:

(a) Whatever has h, has s, for instance e and (b) p has h.

An example of dissimilarity-based PA (VPA) would be:

(a_1) Whatever does not have s, does not have h, for instance f, and (b_1) p has h.

The second conjuncts of SPA and VPA, (b) and (b_1) are identical. But (a) of SPA is affirmative, asserting a relation of universal concomitance between the presence of h and the presence of s in a unidirectional manner. That is, it only asserts that anything which has h also has s and not the converse of it. The example e which it contains is also positive since it is one of having s because of having h. The example has to be one which is well-known or indisputable, and therefore it functions as an illustration, or instantiation, of the universal relation between h and s affirmed by (a). p is similar to e (*sadharmā*) in having h which e also has. Because of p's similarity (*sādharmya*) with e and things like e which have s if they have h, the above SPA entails the conclusion 'p has s'. But this entailment is so obvious that the conclusion entailed does not need to be mentioned. Therefore, it is left unmentioned. Since this inference is based on the similarity (*sādharmya*) between p and e, or rather between p and things like e, it is named by DK *Sādharmavat Parārthānumāna* (similarity-based inference for someone else).

VPA is linguistically or verbally different from SPA because (a_1), occurring in it, is verbally different from (a), occurring in VPA. (a_1) is a negative proposition asserting the universal concomitance between the absence or negation of s and the absence or negation of h. It too is unidirectional because it only asserts that anything which does not have s, does not have h, and not the converse of this. The example f which it has is dissimilar (*vidharmā*) to p, that is, of a nature contrary or opposed to the nature of p, in so far as while p has h, f does not have h, the presence of which in p is the logical reason (*hetu*) for inferring that p has s. f does not have h because it does not have s. Because of p's dissimilarity (*vaidharmya*) to f and to things like f which do not have h if they do not have s, p is inferred to have s. The conclusion 'p has s' is entailed by the VPA as obviously as it is by the corresponding SPA and is not mentioned for the same reason, that is, the obviousness of the entailment. Since this inference is based on the dissimilarity (*vaidharmya*) between p and f,

or rather between p and things like f which do not have h if they do not have s, DK calls it *Vaidharmyavat Parārathānumāna* (dissimilarity-based inference for someone else).

The following examples given by DU[8] would make clearer what has been presented above in a schematic manner:

(A) (i) Whatever is an effect (*kṛtaka*) is non-eternal (*anitya*), for example a jar,

and, (ii) Sound is an effect.

The obvious conclusion from (i) and (ii) would be that sound is non-eternal (*anitya*).

In (A), being an effect is the *hetu* for being non-eternal. Being non-eternal is the *sādhya*, the property to be inferred, and sound, the subject, or *pakṣa*, of which its affirmative predication is inferred. There is similarity between a sound and a jar, the object mentioned in the example, because like the latter, the former too is an effect, that is, has the property of being an effect, which is the *hetu* for being non-eternal. That is why the sentential formulation of its logical mark, as well as the entire argument, or act of inference based on that, is called similarity-based (*Sādharmyavat*):

(A_1) (ia) Whatever is eternal is a non-effect, for example, the sky,

and, (iia) Sound is an effect.

The obvious conclusion from (ia) and (iia) also, as in (A) from (i) and (ii), is that sound is non-eternal.

(A) and (A_1) are equivalent inferences or arguments because the second premise and conclusion of one are identical with the second premise and conclusion of the other. The first premise of (A) is different from that of (A_1) in grammatical form. But the two are logically equivalent because one is the transposed form of the other. The division of inferences into SPA and VPA is thus based exclusively on the different grammatical forms of the *vyāpti*, the universal proposition, occurring in each one of them which makes no difference to their logical role. DK admits their logical equivalence when he says that the job which one performs is non-different from the job which the other does.[9] And, DU elaborates this point by adding that both of them equally well express the three-

[8]Ibid., p. 190.

[9]*Nānayorarthatah Kaścid Bhedah*

SNS, NB, p. 192.6.

From the point of view of the logical role they perform, there is no difference between the two forms (SPA and VPA) of inference.

featured logical mark and they have the same objective.[10] The *Sādharmyavat* (similarity-based) *Parārthānumāna* (SPA) and the *Vaidharmyavat* (dissimilarity-based) *Parārthānumāna* (VPA) are, thus, only affirmative and negative characterizations of the same relation, that is, of the invariable concomitance, between the *hetu* and the *sādhya*, and not really different formulations. Therefore, both serve the same purpose.

4. Similarity-based (*Sādharmyavat*) Not the Method of Agreement and Dissimilarity-based (*Vaidharmyavat*) Not the Method of Difference

Stcherbatsky calls SPA the Method of Agreement and VPA the Method of Difference.[11] Many modern Indian interpreters also do the same thing. But it is wrong to do that. Each one of the Method of Agreement and the Method of Difference, as enunciated by J.S. Mill and used in Western logic, is an inductive method of finding out or ascertaining the cause, or effect, of a given phenomenon on the basis of actual instances. The result arrived at is an inductive generalization of some such form: Tokens of A, or A-like things, are the causes of tokens of a, or of a-like things; or tokens of a, or a-like things, are the effects of tokens of A, or of A-like things. SPA and VPA are forms of deductive inferences, and therefore neither SPA can be called the Method of Agreement, nor VPA the Method of Difference.

To quote Mill

> The simplest and most obvious modes of singling out from among the circumstances which precede or follow a phenomenon those with which it is really connected by an invariable law are two in number. One is, by comparing together different instances in which the phenomenon occurs. The other is, by comparing instances in which the phenomenon does occur, with instances in other respects similar in which it does not. These two methods may be respectively denominated the Method of Agreement and the Method of Difference.[12]

It may be said that the invariable relation of agreement in presence between the *hetu* and *sādhya* of SPA, the statement of which is an

[10]*Dvābhyām api trirūpam lingam prakāśyata eva.*
Tatah prakāśayitavyam prayojanam anayorabhimam.
Tathā ca na tato bhedah kaścit.
SNS, NBT, p. 192.

The three-featured logical mark is expressed by both of them. Thus, to express the three-featured logical mark is the common objective of both of them. From the point of view of the objective, therefore, there is no difference between them.

[11]BL II, p. 132 and in the discussion that follows.

[12]J.S. Mill, *A System of Logic* (Longmans, 1947), p. 253.

affirmative universal proposition, is ascertained by the Method of Agreement, and that of agreement in absence between the *hetu* and *sādhya* of VPA, the statement of which would be a negative universal proposition is ascertained by the Method of Difference. But even this interpretation would not make the use of *both* the methods necessary.

The negative universal proposition about the relation between the *hetu* and *sādhya* of VPA is the transpositive of the affirmative one about the relation between the *hetu* and *sādhya* of SPA. Therefore, after arriving at the latter by the Method of Agreement and then by simply transposing it, one can get the negative universal proposition of VPA, stating the relation of agreement in absence between the *sādhya* and the *hetu*. Or, one can first get the negative universal proposition of VPA by the use of the Method of Difference and then get the affirmative universal one of SPA by transposing the VPA's negative universal proposition. Therefore, it is not necessary to use both the Methods of Agreement and Difference.

The real point to be noted here is that neither SPA itself involves, or is a Method of Agreement, nor VPA itself involves or is a Method of Difference. The universal concomitance between the *hetu* and the *sādhya* in both might have been established with the use of both, or any one, of the Methods of Agreement and Difference. But on that account neither can SPA be called the Method of Agreement, nor VPA the Method of Difference. If we do that then since the *pakṣa vākya* too, like the statement of universal concomitance is a conjunct of the *hetu vākya* of both and may itself have been arrived at on the basis of perception, we would have to say that both SPA and VPA are perceptions, or perceptual modes of cognition. An inference pattern is better named on the basis of the kind of relation or bond between its premises and conclusion, and on this criterion both SPA and VPA, or PA (as well as SA), are deductive inferences because their premises entail their conclusion. It is wrong to name an inference pattern on the basis of the method or methods used to establish its premises because different premises or different parts of a single premise might have been arrived at on the basis of different modes of cognition. And what makes an inference valid is not the mode of cognition which has given a premise, but the truth of a premise and its entailing, when conjoined with others, if any, its conclusion. The validity of SPA and VPA, or rather of SA and PA is determined in this very way. Examining whether or not a certain premise is true, or how it has been arrived at, or proving the truth of a premise, etc. would be another kind of exercise, outside the scope of the SPA and VPA, or of SA or PA, in which it occurs as a premise. DK himself calls an inference SPA or VPA not on the basis of how any conjunct of its HV, the *pakṣa vākya*, or the *vyāpti*, positive or negative, has been arrived at. Rather like a formal

logician, he decides their nomenclature on the basis of the linguistic or verbal forms of the *vyāpti* in each case; the one whose *vyāpti* is affirmative in form he calls SPA and the other whose *vyāpti* is negative he calls VPA. This is very sensible because the *pakṣa vākya* in both the cases is of the same form, or rather identical.

5. Similarity-based (*Sādharmyavat*) and Dissimilarity-based (*Vaidharmyavat*) Distinction not Inapplicable to Inference for Oneself (*Svārthānumāna*)

DK speaks of the similarity-based (*Sādharmyavat*) and dissimilarity-based (*Vaidharmyavat*) distinction only in the context of PA's. DU's justification for his doing that is that since the distinction is purely linguistic and a PA, unlike an SA, is the linguistic formulation of the HV, it is more appropriate to make the distinction in respect of PA's. In a sense it is true, but it should not be taken to imply that the distinction is not applicable to SA's. It has been shown earlier [see Chapter 3.2 (a)], that even an SA is not non-linguistic. And, although in it the HV may not be fully stated and therefore the *vyāpti*, the universal proposition about the invariable concomitance, positive or negative, between the *hetu* and the *sādhya*, or the *sādhya* and the *hetu* may not be explicitly mentioned, the *vyāpti* is used by the inferer to draw the conclusion. And, sometimes he may use the positive *vyāpti*, and sometimes the negative *vyāpti*, depending on which one occurs to him more easily, or more handily; when the *vyāpti* used by him is the positive one, his inference would be *Sādharmyavat Svārthānumāna* (SSA), and when the negative one, it would be *Vaidharmyatvat Svārthānumāna* (VSA). For example,

> There is fire on that hill
> because
> There is smoke there
> and
> Wherever there is smoke, there is fire, as in a kitchen

would be SSA, and:

> There is fire on that hill
> because
> There is smoke there
> and
> Wherever there is no fire, there is no smoke,
> as in a pond

would be VSA. When the positive *vyāpti* makes an inference similarity-based and the negative one dissimilarity-based, SA, too, could, therefore, be SSA or VSA, depending on the nature of the *vyāpti* recollected by the inferer.

6. Similarity-based (*Sādharmyavat*) Forms of Inference for Someone Else (SPA)

We have seen that, according to DK, there are three types of inferences, AHI, SHI, and KHI, depending on the three types of *hetus*, AH, SH, and KH. In its PA form, each one of them can be formulated in the form of an SPA, or in that of a VPA. DK first illustrates the SPA forms, and then the VPA forms, taking the three types one by one.

6. (a) Inference with Similarity-based (*Sādharmyavat*) Non-cognition (*Anupalabdhi*) as its Logical Reason (*Hetu*) (SAHI)

An inference of this type is illustrated by

> Anything, which is not perceived at a place (*anupalabdha*) though it is ULP, that is, satisfies the conditions of being perceived if it existed there (*upalabdhilakṣaṇaprāpta*), is a thing in respect of which the appropriate behaviour is, that which is appropriate in respect of a non-existent thing there (*Abhāva vyavahāra*), for instance, a hare's horn ascertained to be non-existent by another form of knowledge (*pramāṇa*),
>
> and
>
> No jar is perceived at a certain place though it satisfies the conditions of being perceived if it existed there.[13]

The obvious, though unmentioned conclusion of the above argument is that it is appropriate to behave in respect of the unperceived jar there as it is to behave in respect of a non-existent jar there. An appropriate behaviour in respect of a non-existent jar at a place could be *having* the veridical congition that no jar exists there, or *asserting* that no jar exists

[13] SNS, NB, p. 194.8.

(DK has given his examples very concisely, using the relevant technical terms. I have tried to state in ordinary language which has, in general, made the presentation a little prolix because an ordinary language version of a technical term is usually lengthier than the latter. This has been done to facilitate intelligibility—Author.)

there, or moving to and fro at the place as freely as one moves at a place where no jar exists. To say that the example of the non-existent horn on a hare's head, mentioned in the *vyāpti*, has been ascertained by another form of knowledge, means that it has been ascertained by a means of knowledge other than the inference in which it is being used as an instantiation of its *vyāpti*. This requirement is obviously to avoid the occurrence of a *petitio* in that inference.

In this example of SAHI given by DK, 'a thing's being not perceived at a place even though it satisfies the conditions of having been perceived if it existed there' is the AH, 'being a thing in respect of which the appropriate behaviour is that which is appropriate in respect of a non-existent thing there' is the *sādhya*, and 'a hare's horn' mentions an indubitable instance of the positive relation of invariable concomitance between the AH and the *sādhya* asserted in the *vyāpti*. Since the *vyāpti* asserts that anything of which the AH is true, the *sādhya* is also true of it, the AH is a *Sādharmyavat hetu* (SH) and the inference an SAHI. The locus in this SAHI is 'a (hypothesized or imagined) jar not perceived at a certain place though it satisfies the conditions of having been perceived if it existed there'. It is such an unperceived object taken to be non-existent, about which negative behaviour (*abhava vyavahāra*) is inferred, or proven to be appropriate in this SAHI.

6. (b) Inference with Similarity-based Identity as (*Sādharmyavat Svabhāva*) as its Logical Reason (*Hetu*) (SSHI)

According to DK, a *Svabhāva Hetu* (SH) may be unqualified (*śuddha*) or qualified (*viśiṣta*), giving rise to two major types of *Svabhāva hetus* (SH's) and *Sadharmyavat Svabhāva Hetu* inferences (SSHI's). In (b) (i) we shall discuss the working of an unqualified SH and of an SSHI in which it occurs. The qualified SH is further subdivided into two sub-types, one of which is qualified with an adjective non-different (*abhinna*), and the other with an adjective different (*bhinna*), from the SH. In (b) (ii) the former and the inference in which it occurs will be discussed, and in (b) (iii) the latter and the inference which has it. Thus, for DK, there are in all, three types of SH's and SSHI's, unqualified and qualified taken together.

The mode of DK's speaking of a *hetu* as unqualified, or as qualified in either of the two ways mentioned above, is made familiar by DU with the help of an example from our common talk.

He says that when we call a man named 'Devadatta' just Devadatta,

we refer to him in an unqualified manner, that is, without attributing to him any adjective. When we call him 'Devadatta having long ears', we refer to him as qualified by the attribute of having long ears. Here the adjective, 'having long ears', attributed to him, is non-different from what Devadatta as a human being is. But when we refer to him as 'Devadatta possessing a cow with spotted colours' we attribute to him an adjective which is different from what he as a human being is.[14]

6. (b) (i) Unqualified SH and SSHI

> Whatever is existent is non-eternal, for
> instance, a jar, etc.
> and
> Sound is existent.[15]

This example DK gives as one of unqualified or neat SSHI because its *hetu* is unqualified or neat. Here 'being existent' (*sat*) is the *hetu* and 'being non-eternal' (*anitya*) the *sādhya*. This SH is unqualified in the sense that merely being an existent, and not being an existent of some particular kind or description, that is, qualified by some specific adjective is the SH for being non-eternal. The Buddhist metaphysical theory of the non-eternality or momentariness of everything existent is presupposed here. One who does not consider this theory to be tenable would not consider the *vyāpti* of the example, 'Whatever is ... etc.', to be true. But the metaphysical controversy about its truth is of no importance here because here it is considered only as an example of a positive *vyāpti* in an SSHI given by DK, and not as a substantive statement of the doctrine of momentariness. Even in the other two examples of SSHI, which will be discussed soon, the doctrine of momentariness is presupposed. But, since we are concerned in this section only with the logical status of SSHI as a form of inference, and not with the latter, we shall not raise any question about the Buddhist metaphysics of momentariness.

The *vyāpti* in the present example and two other examples, as we will see, is *formally* all right since it asserts the relation of universal concomitance between the *hetu* and the *sādhya* as it is required to do in a similarity-based (*Sādharmyavat*) PA. Even the PV, 'Sound is existent', *seems* to be all right, but when examined closely it reveals some really

[14]SNS, NBT, pp. 202–3.
[15]SNS, NB, pp. 198.9, 208.14.

intractable problems which seriously hamper its functioning as a PV. To assert the PV in any inference is to assert that the *hetu* is necessarily present in the *pakṣa*, the locus of the inference. Such an assertion can be made only if the locus is an individual, existent, object, a particular place, person, entity, event, etc. The *pakṣa* of an SHI, or a KHI, must be existent because only an existent thing can have in it something which is an SH, or a KH, for the *sādhya*. When we have 'This is a *Śimśapā*' as the PV in an SHI, or 'That hill has smoke' as the PV in a KHI, the terms 'This' and 'That hill' are uniquely referring expressions denoting an existing particular; a particular plant is referred to by 'This' in 'This is a *Śimśapā*', and a particular hill by 'That hill' in 'That hill has smoke'. This is clear from the fact that the PV is always in SHI's and KHI's, a singular affirmative existential proposition and the *pakṣa*-term a uniquely referring expression, a singular term, denoting an existing individual object.

Let us look at 'Sound is existent', the PV of (b) (i). 'Sound' must mean here a unique, individual, existing, sound. It must because it is doing the role of a uniquely referring expression and therefore would denote here a particular existing sound. That is, it must mean something like 'This, (or that) sound is existent'. But then it would become a tautology because 'This (or that) sound' means a particular, existing sound. It is a tautology to say 'This sound is existent' because 'This' carries with it the existential cap wherever it goes. We cannot say 'This is existent' non-tautologically because since 'This' on its own carries with it the sense that what it is used to talk about exists, there is no sense in saying 'This is existent'. What I want to point out is that in 'Sound is existent', 'Sound' must perform the role of a uniquely referring expression, that is, it must mean a particular, existing sound, to enable 'Sound is existent' to function as a viable PV. But if it does that, then 'Sound is existent' cannot function as a PV because then it would become a tautology. A PV must assert that the *hetu* is necessarily present in the *pakṣa* but a tautology cannot assert that since it does not assert anything. The problem here is that the place of the predicate of the *hetu*, is occupied by 'existent' and the place of the subject, of the *pakṣa*-term, has to be occupied by a singular, denoting expression. With the subject term 'This', 'That', or even 'This, or that sound', we cannot allot the place of the predicate to 'existent' or any equivalent of it. This means that when 'existent', or 'being existent' is the *hetu*, we cannot have a PV, unless DK's definition of a PV, or, of the first feature of the *hetu* ('being necessarily present in the *pakṣa*') is drastically modified. No wonder that doing that would alter the basic character of his theory of inference because the concept of the PV, or of the first feature of the three features of the *hetu*, is basic to it. A better way to save the situation may be to introduce

into the theory the restriction that 'existent', or any equivalent of it, cannot be used as a *hetu*. This would only be requiring that 'existent', or any equivalent of it, is not to be used as a logical predicate, and therefore not at all an unreasonable restriction.

In the *Śimśapā*-tree example of SHI, DK has given the PV 'This is a *Śimśapā*' for inferring 'This is a tree'. This example is also one of unqualified SSHI because the *hetu* is unqualified. Just being a *Śimśapā*, and not being a *Śimśapā* of a certain kind, say, being tall, profusely leafy, etc., is the *hetu* for being a tree. 'This is a *Śimśapā*' really means 'This plant is a *Śimśapā*'. But in whichever form we take it, in the former or the latter, it is unobjectionable. We can assert it non-tautologically because to say that the existent plant referred to by 'This', or 'This plant', is a *Śimśapā* is not a tautology. It is not a tautology because to exist as a plant is not the same thing as being a *Śimśapā* because a plant could also be a non-*Śimśapā*. There are non-*Śimśapā* plants also. When we say, 'This is y', or 'This x is y', we really say 'This existent is y' or 'This existent x is y'. When y is a predicate different from 'existent', say 'being a *Śimśapā*', we can say non-tautologically 'This is y', or 'This x is y'. That is why the kind of problem which arises with the PV 'Sound is existent' does not arise with a PV whose predicate or *hetu*, is something other than being existent.

The PV of (iia), 'Sound is existent', therefore, cannot be taken to mean or be equivalent to, 'This sound is an existent' to make it grammatically similar to 'This plant is a *Śimśapā*', the PV of the *Śimśapā*-tree SHI. The former is a tautology and the latter is not. It cannot also be taken to mean 'The class consisting of every particular sound is existent' because DK would not agree to call a class existent; Buddhists do not consider any class to be existent or real. It cannot even mean 'All individual sounds are existent' because that is not true. A sound could be even imaginary. Moreover, a PV cannot be a universal proposition because the *pakṣa* is held to be a particular thing by Buddhists as well as non-Buddhists. For the same reason, it cannot mean 'A sound is existent'. Moreover, 'a sound', or 'some sound' is an indefinite term, and therefore it would also make indefinite the PV in which it occurs as the subject. When the PV is indefinite, the conclusion of the inference, 'Sound is non-eternal', would also become indefinite, that is, would have an indefinite meaning. This would make the whole process of inferring it vitiated with indefiniteness and therefore an *apramāṇa* (non-veridical cognition). An indefinite conclusion, and therefore the inference which yields it, cannot be a means to the attainment of an object of desire which, every *pramāṇa* by definition, in DK's theory of inference is. Datta is right when he says that in order to avoid the entry of indefiniteness in inferential cognition,

classical Indian logic does not allow the use of a particular proposition, the Aristotelian I, or O, proposition, as a premise.[16]

6. (b) (ii) SSHI with SH Qualified by a Non-different Attribute

DK gives the following as an example:

> Whatever has an origin (*utpatti*), is
> non-eternal, for instance, a jar,
> and
> Sound has an origin.[17]

Its conclusion obviously is that sound is non-eternal. Here a thing's having an origin or originatedness (*utpatimattā*) is the *hetu*, its being non-eternal or momentary, is the *sādhya* and sound is the *pakṣa*. The *vyāpti* asserts that wherever is the *hetu*, there is also the *sādhya*. Therefore, the inference is similarity-based (*Sādharmyavat*). According to DK's school of Buddhists, for anything to be originated is to be, or to become, what it is, and to be what it is, is (or means) to be momentary. A thing's being originated, that is, its being what it in itself is (*svabhāva* = own existence = originated-ness), and not anything different from it, being the *hetu* for its momentariness, the *hetu* here is an SH. The *hetu* is not different from the *sādhya* because to be originated, is to be momentary. Its being what it is, is identical with its having been originated and its having been originated is to be momentary. The *hetu* is, thus, as is true of any SH, identical with the *sādhya*.

When we say in language that a thing's, for example, sound's, existence, or being, is an originated something, or something having an origin, we use 'having been originated' as an adjective (*viśeṣaṇa*) of sound's existence. But, as has been said above, the adjective, its having been originated, ontologically speaking, is identical with its being or existence (*svabhāvabhūta*). Therefore, to qualify the latter with it is to qualify it with an adjective non-different (*abhinna viśeṣaṇa*) from it. That is why the SH here is said to be the existence of the *pakṣa*, or, the *pakṣa* qualified by an adjective which, in reality, is not different from it.

As DU puts it, in using this SH, we imagine the attribute, originatedness, which is really non-different from the *pakṣa*, sound, to be different from the latter and then ascribe it to the latter and say that the latter

[16]D.M. Datta, *The Six Ways of Knowing* (Calcutta University, 1972), p. 220.
[17]SNS, NB, p. 200.10.

sound is an originated thing. We have to do this exercise of imagining as different what is non-different in order to be able to say in language, to verbalize that sound is originated, that is, to make possible the linguistic formulation of the PV 'Sound has an origin' (or 'Sound is an originated thing'). It is only by imaginatively differentiating from the substantive the attributive, which is non-different (*svabhāvabhūta*)[18] from the substantive, that we can ascribe the attributive to the substantive.

In giving the above characterization, it seems to me, that DU is pointing to the linguistic practice that we cannot verbally designate the originated existence, or origination-dependent existence, of a thing to be the *hetu* for its momentariness, unless we imagine, or let it appear in the verbalization, that its being originated is an adjective of its existence and therefore different from its bare existence, though, in fact, it is not. He also adds that when we have to distinguish a thing which has an origin, for example, sound, from a thing which has no origin, for example, the sky, simply on the ground that one is, and the other is not, originated, we have to qualify the former by the adjective 'originated' as if calling it originated were different from simply calling it existent, though, in fact, it is not.[19]

6. (b) (iii) SSHI with an SH Qualified by a Different Attribute

> Whatever is an effect (*kṛtaka*), is
> non-eternal, for instance, a jar
> and
> Sound is an effect.[20]

Here is an illustration of this kind of SSHI, a thing's being an effect is the *hetu* and its being non-eternal is the *sādhya*. Its being an effect is the same as being non-eternal since, as per the metaphysics assumed here, to be is to be an effect which is the same as being non-eternal or momentary. 'To be', 'to be an effect', or 'to be momentary', they all, ontologically, signify the same thing. Therefore, a thing's being an effect is an SH for its being non-eternal. The example given here is one of SSHI because

[18]*Svabhāvabhūtah svabhāvātmako dharmah*
SNS, NBT, p. 201.
An existentially identical attribute means the attribute which is identical with that to which it is attributed.
[19]Ibid.
[20]SNS, NB, p. 202.11.

the *vyāpti* states the agreement in presence between the *hetu* and the *sādhya* since it asserts that of anything, of which the *hetu*, its being an effect (*kṛtakatva*, or effecticalness), can be affirmed, the *sādhya*, its being non-eternal (*anityatā*), can also be affirmed.

What DK, and following him DU, maintain here is that when a thing's being an effect works as the *hetu* for its being non-eternal, it is the thing itself, qualified by the attribute of being an effect, which works as the *hetu*. And, since the attribute of being an effect is different from the thing itself, in being qualified by it, the latter is qualified by a different (*bhinna*) attribute (*viśaṣaṇa*). To say that sound's being an effect is the *hetu* for its being non-eternal is to say that sound itself, which has the attribute of being an effect, is the *hetu*.

For anything to be an effect is to have a being produced by a cause, or a set of causal factors, different from the thing itself. Therefore, to describe a thing as an effect is to describe it as having been produced by something different from it, that is, to qualify it with the adjective 'having been produced by something different from it'. This adjective is different (*vyatirikta*) from, or not identical with the thing it qualifies because it involves a reference to something different from the thing itself, that is, a reference to the thing or things which have produced it.[21] In this respect the *hetu* of this SSHI, 'a thing's being an effect' is different from that of the SSHI exemplified in (b) (ii). The *hetu* of (b) (ii) is a thing's having been qualified by the attribute of having been originated (*utpattimattā*). Since the attribute of the thing's having been originated is non-different from what thing in itself is, the *hetu* is the thing itself qualified with an attribute or adjective (*viśeṣaṇa*) non-different (*avyatirikta*) from the thing as it in itself is. Both (b) (ii) and (b) (iii) are different from (b) (i) because the *hetu* in the latter, a thing's being existent is qualified by no attribute, different or non-different from the thing as it in itself is. In all the three uses of an SH, a thing's being what it is, is the *hetu*, and the *hetu* is in a sense identical with the *sādhya*. The inferences in which they occur are all SSHI's and they differ from each other only because the SH in (b) (i) is unqualified, the SH in (b) (ii) is qualified by an attribute non-different from it, and the SH in (b) (iii) too is qualified but by an attribute different from it.

[21] *Yasmād apekṣitaparavyāpārah kṛtaka*
ucayate tasmād vyatiriktena viśeṣaṇena
viśiṣtah svabhāva ucayate.
SNS, NBT, p. 204.

Since what is dependent on the operation of things (causes) other than itself is called an effect, here the existentially identical logical reason (*svabhāva hetu*) (in being called an effect) has been said to be qualified by an attribute different from itself.

In (b) (iii), the SH, in being qualified by 'being an effect', is qualified by the attribute 'having been caused by another thing', and that is why it is called an SH qualified by a different attribute. Let us call it DSH, for short. DK says[22] that just as an SH becomes a DSH when qualified by a different attribute involving a reference to a cause which is something other than the SH, in a similar way, it should also be considered to have become a DSH if a *difference in its cause* leads to some difference in it. For example, as per Buddhist metaphysics, it is in the nature, or being of a thing to be different from everything else because, though everything has a cause, the cause of everything is different from that of everything else.

Expanding a point suggested by DU, we can also say that it has become, or has been made different when it has a *different* cause. When a variation in its causal factor, or factors has occurred, then, too, in characterizing it we would be qualifying its being different, which is its nature, with an attribute different from what it is. It would be a different attribute, as is the case in (b) (iii), because it would involve a reference to a cause which is other than the thing itself. But it would be a *different kind of different attribute* compared with the different attribute attributed to SH in (b) (iii) because it would involve a reference not only to a cause, but to a *different* cause, or rather to a *difference* or variation in some causal factor or factors of it.

We can illustrate what has been said above as follows, here too giving an expanded version of the example indicated by DU.[23]

> Whatever is made different when a causal factor of it is made different is an effect, for instance, a jar. (A jar becomes different if the clay, out of which it is made, is different, or the colour of the clay is different, or the thickness of the wall of the jar is made different, etc.)
>
> Sound also is made different when a causal factor of it is made different. (A spoken word which is a sound, varies in accordance with the variation in any of its causal factors, for example, the pitch, loudness, timbre, bass, emphasis, accent, etc., with which it is uttered by a speaker.)

[22]SNS, NB, p. 205.13.

[23]SNS, NBT, pp. 206–7.

(Even DU's gloss on DK's definition of (b) (iii) is extremely brief and contains a number of technical, terminological knots not easy to untie. That is why his main logical point has been expanded a little to present it in an intelligible ordinary language, as jargon-free as possible—Author.)

To conclude, (b) (i) is an example of SSHI with an unqualified SH because in it sound itself is the *hetu* for being momentary but only as an unqualified existent. In (b) (ii) too, sound itself is the *hetu* for being momentary but as qualified with the attribute of having been originated. This attribute is non-different from sound itself because for sound to be sound, to be what it is, is to be an originated thing. Therefore, here, sound is the *hetu*, but as qualified by a non-different attribute. In (b) (iii) also, sound itself is the *hetu* for being momentary but as qualified by the attribute of having been an effect, that is, of having been caused by something other than sound. The latter, because it involves a reference to something other than sound is an attribute different from sound, and therefore, in (b) (iii), the *hetu*, sound, is qualified by a different attribute. When sound is qualified by the attribute of being an effect involving a reference to some difference in a causal factor which has produced the sound, for example, when it is said to be a boisterous laughter made by the person concerned out of malice, then too it would be qualified by a different attribute. Since such variations in causal factors could be of so many kinds, there could be several kinds of *hetu*s under this head. But all of them would be basically of the type which (b) (iii) illustrates.

6. (c) Inference with Similarity-based (*Sādharmyavat*) Causation as its Logical Reason (*Kārya Hetu*) (SKHI)

In SKHI, the *hetu* is an effect, a KH, and the *vyāpti* asserts the universal, or unexceptionable agreement in presence between the effect and its cause, that wherever exists the thing which is an effect, there invariably exists the thing which is its cause. We have seen while discussing how the KH works in an inference in a KHI, that the cause C, whose presence the effect E implies is the cause with its effective, unobstructed, capability to produce E. As an example of SKHI, DK mentions[24] an example that has been stated in the earlier discussions:

> Wherever there is smoke, there is fire,
> as in a kitchen, etc. and here also is
> smoke.

The conclusion, unmentioned but necessarily implied by this HV, is 'Therefore, here is fire'. The presence of smoke is the *hetu*, the presence of fire the *sādhya*, and since the *vyāpti* affirms the invariable presence of

[24]SNS, NB, p. 217.21.

the *sādhya* where the *hetu* is present, the inference which has this HV as its premise is an SKHI.

In SKHI also, as is true of SAHI and SSHI, the presence of any E can be used as the KH for inferring the presence of any C if and only if it has been already established, or proven, that the presence of C is actually the cause of the presence of E, when it has been found that the presence of E has always been caused by that of C.

What DK and DU[25] want to highlight by saying this is that what makes the presence of E a KH for inferring that of C is not C's mere potentiality, or competence, to produce E, but the established truth about the actual, effectuating, performance of C in invariably producing E. It is a common feature of all the three forms of inferences, SAHI, SSHI, and SKHI that what makes any x a *hetu* and any y its *sādhya*, in the sense that y can be inferred from x, is the well-established, confirmed, or proven (*siddha*) truth that of anything of which x is true, or to which x is ascribed, of that thing y is also true, or to that y is also to be ascribed. This is not an unusual requirement; it only means that the *vyāpti* must be an unquestionable truth, that the logical reason (KH, AH, or SH) must be dependent on what it is used to infer in the sense that its ascription to a thing is an invariable, absolutely unerring warrant for the ascription of the inferred, the *sādhya* to that thing. In the case of SKHI, as illustrated here, a particular place's being smoky, or the ascription of smokiness to it, is the KH for inferring that it is fiery or for ascribing fieriness to it, because it is a well-established truth, exemplified in places like a kitchen, that the presence of smoke is actually caused by the presence of fire (capable to produce it). This truth is based on the actual performance, and not merely on the competence of fire to produce smoke.

7. Dissimilarity-based (*Vaidharmyavat*) Forms of Inference for Someone Else (VPA)

After having discussed the three forms of SPA, it is not necessary to discuss in any detail the three corresponding forms of dissimilarity-based (*Vaidharmyavat*) *Parārthānumāna* (VPA) because an SPA is equivalent to a corresponding VPA. The *vyāpti* of a VPA is the transposed form of the *vyāpti* of a corresponding SPA. This is the only difference between the two, and it is verbal or syntactical, and not at all logical. This point has been made in the chapters in which SA and its forms have been discussed.

[25]SNS, NB, p. 218.22; NBT, p. 218.

Both DK and DU very candidly and forthrightly acknowledge this logical fact, and it is for this reason that they do not discuss VPA forms in detail. They do exemplify these primarily to exhibit their formal structure or to help as a formal logician does, a student to learn how to express in language an inference in both the VPA and SPA forms without doing any damage to their equivalence, to avoid being misled to think that a different argument has been given when what has been given is only in a VPA (or an SPA) form what had earlier been given in an SPA (or a VPA) form, etc.

The *vyāpti* of an SPA shows that the presence of the *hetu* implies the presence of the *sādhya*, and the example instantiates it. The *vyāpti* of a VPA shows that the absence of the *sādhya* implies the absence of the *hetu*, and the example instantiates it. But for this difference, a VPA and a corresponding SPA are non-different from each other because the *pakṣa vākya* and the conclusion in the two are identical. All this is obvious but even then I shall mention DK's examples of the three forms of VPA's to illustrate their formal structure. As an example of inference of dissimilarity-based (*Vaidharmyavat*) non-cognition (*anupalabdhi*) as its logical reason (*hetu*) (VAHI), he offers,[26]

> Whatever exists (at a particular place) and satisfies the conditions of being perceived is necessarily perceived, for instance, a particular patch of blue colour, and even though a jar satisfies the conditions of being perceived, no jar is perceived here.

The conclusion of this HV obviously is 'There exists no jar here'. Non-existence of a jar is the *sādhya*, and the particular place indicated by 'here' is the locus. For inferring the non-existence of a jar, the *hetu* in it is an object's satisfying the conditions of being perceived (if it were here) and still not being perceived. In a corresponding SAHI, therefore, the *vyāpti* would be 'Whatever which satisfies the conditions of being perceived at a certain place (Sx) and is not perceived there (~Px), does not exist there (~Ex)'. In a corresponding VAHI, which the above *hetu vākya* illustrates, therefore, the *vyāpti* would be its transposition which exactly the *vyāpti* in the VAHI *hetu vākya* is. 'Whatever which exists at certain place (Ex) and satisfies the conditions of being perceived (Sx), is necessarily perceived there (Px)' is the transposed form of the *vyāpti* of the above example's corresponding SAHI form. This can be shown very clearly and more

[26]SNS, NB, p. 219.23.

exactly if we use the symbolic abbreviations mentioned within brackets. The SAHI *vyāpti* would then be

$$(Sx\ .\ {\sim}Px) \supset {\sim}Ex$$

and the VAHI *vyāpti*

$$(Ex.\ Sx) \supset Px.$$

That $(Ex.\ Sx) \supset Px$ is the transpositive of $(Sx.\ {\sim}Px) \supset {\sim}Ex$, that is, equivalent to ${\sim}{\sim}Ex \supset {\sim}(Sx.\ {\sim}Px)$, can be shown by deducing $(Ex.\ Sx) \supset Px$ from $({\sim}{\sim}Ex) \supset {\sim}\ (Ex.\ {\sim}Px)$ and vice versa, as is demonstrated below:

(i)	1.	${\sim}{\sim}Ex \supset {\sim}(Sx.\ {\sim}Px)$ / ∴	$(Ex.\ Sx)\ Px$
	2.	$Ex \supset {\sim}(Sx.\ {\sim}Px)$	1 DN.
	3.	$Ex \supset (Sx \supset Px)$	2 Impl.
	4.	$(Ex.\ Sx) \supset Px$	3 Exp.
(ii)	1.	$(Ex.\ Sx) \supset Px$ / ∴	${\sim}{\sim}Ex \supset {\sim}(Sx.\ {\sim}Px)$
	2.	$(Sx.\ Ex) \supset Px$	1 comm.
	3.	$Sx \supset (Ex \supset Px)$	2 Exp.
	4.	$Sx \supset ({\sim}Px \supset {\sim}Ex)$	3 Transp.
	5.	$(Sx.\ {\sim}Px) \supset {\sim}Ex$	4 Exp.
	6.	${\sim}{\sim}Ex \supset {\sim}(Sx.\ {\sim}Px)$	5 Transp.

In a VAHI, the negation or absence of the *sādhya* (*sadhyābhāva*) is asserted to have, with the negation or absence of the *hetu* or *sādhana* (*sādhanābhāva*), the relation of not being without the latter (*abinabhāva*), or to imply it. This is true, as DU says,[27] of all VPA's. In the SAHI, non-existence of a jar, I have said, is the *sādhya*. In fact, it is not the non-existence of any jar whatsoever, say, of a magical jar which is unperceivable. If stated fully, it is the non-existence of a perceivable jar, that is, of a jar which satisfies the conditions of being perceived. Therefore, its negation is the existence of a jar which satisfies the conditions of being perceived, abbreviated as Ex. Sx. Obviously the negation of 'not-perceived (~Px)' is 'perceived (Px)'. Therefore we have $(Ex.\ Sx) \supset Px$, the transposition of $(Sx.\ {\sim}Px) \supset {\sim}Ex$,

[27]*Tato Vaidharmyaprayoge sādhanābhāve*
sādhyābhāvo niyato darśanīyah sarvatreti nyāyah.
SNS, NBT, p. 220.

Thus, in every use of inference for someone else, based on the agreement between the absence of the inferred object and that of the logical reason, it is logically obligatory to show that, the absence of the inferred object necessarily implies the absence of the logical reason.

as the *vyāpti* of VAHI, since the latter is the *vyāpti* of the corresponding SAHI.

DK's example of an inference with dissimilarity-based (*Vaidharmyavat*) identity as its logical reason (*svabhāva hetu*) (VSHI) is:

> Whatever is not momentary is neither existent, nor a thing with an origin, nor an effect, but sound is existent, a thing with an origin, and an effect.[28]

The conclusion here definitely is that sound is momentary.

In this inference, being momentary is the *sādhya*, sound is the locus, and being existent, or being a thing with an origin, or being an effect, is a *hetu* for inferring momentariness. The *vyāpti* asserts agreement between the absence of the *sādhya* and that of the *hetu*. More specifically, it asserts that the absence of the *sādhya*, that is, of momentariness, necessarily implies the absence of the *hetus*. Since any one of the three, 'being existent', 'being a a thing with an origin', and 'being an effect', is a *hetu* for being momentary, the absence or negation of the *sādhya* necessarily implies the absence or negation of each one of the three.

We have seen that DK has given three forms of SSHI. In the above example, he has tried to illustrate the *Vaidharmyavat* forms of all the three SSHI's. It is thus, in effect, three examples bundled into one. The three examples can be separately shown as follows:

(i) Whatever is not momentary, is not existent and sound is existent.

(ii) Whatever is not momentary does not have any origin and sound has an origin.

(iii) Whatever is not momentary is not an effect and sound is an effect.

The conclusion in each case is the same, that is, 'Sound is momentary'. Referring back to the three forms of SSHI's, (i) is a VSHI corresponding to Chapter 5.b (i), the SSHI by an unqualified *hetu*, (ii) a VSHI corresponding to Chapter 5.b (ii), the SSHI with a *hetu* qualified by a non-different attribute, and (iii) a VSHI corresponding to Chapter 5.b (iii), the SSHI with a *hetu* qualified by a different attribute. The reader can very easily see by placing the corresponding SSHI and VSHI forms side by side, that they are logically equivalent.

[28]SNS, NB, p. 221.24.

The example of inference with dissimilarity-based (*Vaidharmyavat*) causation as its logical reason (*kārya hetu*) (VKHI) is:

> Wherever there is no fire, there is no smoke and here is smoke.[29]

The conclusion being, 'There is fire here', presence of fire is the *sādhya*, presence of smoke the *hetu*, and the place referred to by 'here' the locus. The *vyāpti* asserts that the absence of the *sādhya* implies the absence of the *hetu*, as it does in any VPA, and it is the transpositive of the *Sādharmyavat vyapti*, 'Wherever there is smoke, there is fire'.

8. The Role of the Equivalence of Similarity-based (*Sādharmyavat*) and Dissimilarity-based (*Vaidharmyavat*) Forms in DK's Theory of Inference

According to DK every valid inference must have a three-featured logical reason. That is, it must state that the *hetu* is: (a) necessarily present in the locus, (b) present only in things similar to the locus, and (c) never present in any thing dissimilar to it. But in SPA, only (a) and (b) are asserted, and in VPA only (a) and (c). Therefore, an objection may be raised that DK's SPA and VPA forms do not conform to his own definition of a valid inference. To this DK's reply is that that is not the case because in SPA, the *Sādharmyavat vyāpti* implies its *Vaidharmyavat* form, that is, its transposition, and therefore in SPA the *Vaidharmyavat* form of the *vyāpti*, the feature (c) of the three-featured *hetu*, is not ignored. It may be said that it exists there as the implicate of the *Sādharmyavat vyāpti*. The same is true, *mutatis mutandis*, of the VPA's not ignoring, or not leaving unsaid, the *Sādharmyavat vyāpti*, the feature (b) of the three-featured *hetu*.[30] DK, like a rigorous formal logician, does not favour including in an argument a premise which is not indispensable for entailing the argument's conclusion. He says that asserting anyone of the two, *Sādharmyavat*, or *Vaidharmyavat*, *vyāpti*, the one not explicitly asserted is implicitly asserted by the explicitly asserted one. Either one of the two works as the spokesperson of the other. Therefore, there is no need to assert both of them in the same argument or inference.[31] This means that in every inference

[29]Ibid., p. 222.25.
[30]Ibid., p. 222.26.
[31]*Ityekenāpi vākyenānvayamukhena vyatirekamukhena vā prayuktena sapakṣāsapakṣayor-lingasya sadasattvakhyāpanam kṛtam bhavatīti nāvasyam vākyadvayaprayogah.*
Ibid., p. 228.32.

both, *Sādharmyavat* and *Vaidharmyavat*, *vyaptis* are present, one visibly and the other by implication. Every inference therefore can be called *Sādharmyavat-Vaidharmyavat*, or *Sadharmyavat*, or *Vaidharmyavat*. PA is the complete verbalization or linguistic formulation, of the three-featured *hetu*, and this is done equally well by stating it either as the conjunction of the *pakṣa vākya* and the *Sādharmyavat vyāpti*, or as the conjunction of the *pakṣa vakya* and the *Vaidharmyavat vyāpti*.

Since the linguistic formulation of an inference, says DU, is done only to communicate to the addressee the exact meaning or thrust of the *hetu vākya*, that is, of the PA concerned, and that is done by having either the *Sādharmyavat*, or the *Vaidharmyavat*, *vyāpti*, as a conjunct of the *hetu vākya* besides the *pakṣa vākya*, including both of them is uncalled for. We do call one formulation of a PA *Sādharmyavat* when it has an affirmative *vyāpti*, and another formulation of it *Vaidharmyavat* when it has a negative *vyāpti*, which is nothing but the transposition of the affirmative *vyāpti* used in the PA we have called *Sādharmyavat*. But doing this does not mean that the two formulations are two different inferences. Rather, both express the same inference though as linguistic formulations, they are different. The reason for calling the former *Sādharmyavat* is that it explicitly asserts the affirmative (*Sādharmyavat*) *vyāpti* and only by implication, the corresponding negative (or *Vaidharmyavat*) one. Similarly, the reason for calling the latter *Vaidharmyavat* is that it explicity asserts the negative (*Vaidharmyavat*) *vyāpti* and only by implication the corresponding affirmative (*Sādharmyavat*) form of it.[32] We can conclude, therefore, that according to DK there do not count two different types of PA's, called SPA's and VPA's but that every PA, as a logical piece, is both SPA and VPA because if it is SPA in its verbal form, it is also a VPA by implication as it is convertible into a VPA simply by transposing its *vyāpti*. On the other hand, if it is a VPA in its verbal form, it too is by implication an SPA for a similar reason. This means that there is no PA which is only SPA, or only VPA.

Thus by the single sentence, used to either assert agreement in presence (between the logical reason and the inferred object), or to assert agreement in absence (between the inferred object and the logical reason), the logical reason's presence in the similar (to the locus) and absence in the dissimilar (to the locus) get expressed. Therefore, it is not necessary to use two sentences, one sentence asserting agreement in presence and another asserting agreement in absence.

[32]SNS, NBT, pp. 229–30.

ELEVEN

The Role of Example (Dṛṣṭānta)

1. The Problem of Instantiation

As per modern logic, a universal proposition does not have any existential commitment. Therefore, given any universal proposition, for example, one which Aristotle calls an A proposition, there is no guarantee ensuing from it that there is also an instantiation of it. 'All wise men are respected' may be true even if there is no wise man, since, a modern logician would say, it only says that given any individual, if that individual is a wise man, he is respected. This means that only from a universal proposition, or even from a set consisting of more than one universal proposition, we cannot validly draw an existential proposition as its conclusion. This would make invalid some of the moods of Aristotle's syllogism in which a particular proposition is inferred from two universal propositions, even though Aristotle puts them in his list of valid moods. Take, for example. Darapti of the third figure:

A_1 All philosophers are sensitive.
A_2 All philosophers are scholars.
Therefore, some scholars are sensitive.

A_1 and A_2, being universal, neither of them has any existential commitment, and therefore, singly, or together, they cannot imply any existential proposition. Therefore, they cannot imply (3) which, being a particular proposition is existential, equivalent to 'There exists at least one individual who is both a scholar and sensitive, that is, a sensitive scholar.'

To protect the validity of such moods, therefore, something needs to be done. One course to adopt in this regard is, as the Kneales[1] suggest, to interpret Aristotle as *assuming* that a universal proposition has an existential instantiation of.it. That is, to assert that all philosophers are sensitive is also to assume that there is at least one individual who is both a philosopher and sensitive, and to assert that all philosophers are scholars is to assume that there is at least one individual who is both a philosopher and a scholar. That is, 'All philosophers are sensitive' is equivalent to 'All philosophers are sensitive and there is at least one individual who is both a philosopher and sensitive', and 'All philosophers are scholars' to 'All philosophers are scholars and there is at least one individual who is both a philosopher and a scholar.' This would be the pattern of interpreting every, affirmative or negative, universal proposition. For example, the E proposition 'No philosophers are thick-skinned' would be equivalent to 'No philosophers are thick-skinned and there is at least one individual who is a philosopher and is not thick-skinned'.

With this interpretation of Aristotle's intention, the validity of Darapti and all others who have only universal propositions as their premises but a particular, that is, an existential proposition as their conclusion, would be saved. But there would arise some other, quite serious problems some of which I will bring out in the next chapter. At this point I only want to say that unless some specific device is adopted as a safeguard, it would not be valid to deduce an existential proposition as the conclusion of a set of premises consisting only of universal propositions.

No such problem arises in DK's (or in classical Indian) theory of inference because according to him (or it), in every inference there must occur an existential proposition as a premise, along with a universal one as another premise. The existential proposition is the PV, the assertion that the logical reason is present in, or true of, the locus and the universal one is the assertion that wherever is the logical reason, there also is the object which is being inferred (*sādhya*) to be present in, or true of, the locus. We have seen that in SA, as the following illustrates,

> There is fire on that hill
> because
> There is smoke there
> (and wherever there is smoke, there
> is fire, as in a kitchen),

[1]William Kneale and Martha Kneale, *The Development of Logic* (Oxford, 1962), pp. 60–61. (The examples given here are not Kneales'–Author.)

the conclusion and the PV are mentioned, but the *vyāpti*, the universal proposition asserting the invariable concomitance between the logical reason and the inferred object is used without being explicitly mentioned. In PA, in both SPA, similarity-based (*Sādharmyavat*) and VPA, dissimilarity-based (*Vaidharmyavat*) forms, the conclusion remains unmentioned, and the PV and the *vyāpti* are given as the two conjuncts of the same proposition, the HV. For example, in the SPA:

(a) Wherever there is smoke, there is fire,
as in a kitchen and (b) there is smoke on that hill,

(a) is the *vyapti* and (b) the PV. The entire conjunction of (a) and (b) is the HV, the complete set of the premises. The same is the case, *mutatis mutandis*, in the VPA,

(a_1) Wherever there is no fire, there is no smoke, as in a lake, and
(b_1) there is smoke on that hill.

Both of these examples are those of KHI. What is true of KHI is also true of AHI and SHI. Therefore, inferring an instantiation of a universal premise, in any form of inference, AHI, KHI, or SHI is not a problem in DK's theory because no inference can consist only of one, or more than one, universal proposition. There must always be, in every form of inference, a PV which by definition is a singular existential proposition asserting that there is, or exists, a thing in which the logical reason (*hetu*) exists, or of which it is true. I use phrases like 'of which it is true', or 'true of' to take care of inferences in which the non-existence of an object is inferred on the ground of its non-cognition. When we infer in a KHI the existence of fire on a hill because of smoke being there, we can say that the logical reason, smoke, exists on that hill, and therefore that the PV 'There is smoke on that hill' asserts the existence of the logical reason (smoke) on the locus (the hill referred to by the uniquely referring expression 'that hill'). Similarly, when we infer in an SHI that this plant is a tree because it is a *Śimśapā*, we can say that the logical reason, 'the attribute of being a *Śimśapā*', is present or exists in the locus, and therefore that the PV 'This is a *Śimśapā*' asserts the existence of the logical reason (*Śimśapā*ness) in the locus (the plant referred to by the uniquely referring term 'This'). But when we infer in an AHI the non-existence of a jar at a particular place s on the ground of its not being cognized to exist there (*anupalabdha*), it is odd to say that the logical reason, a jar's not being cognized to exist there is present or exists at s, and therefore equally odd to say that the PV, 'No jar is cognized to exist at s', asserts the existence of the logical reason (a jar's not being cognized to exist) at s. But we can still characterize the PV

as asserting that the logical reason, 'a jar's not being cognized to exist at s', is true of s. There should be no doubt about the existential character of the PV 'No jar is cognized to exist at s'. The latter is equivalent to 'there is the spot s where no jar is cognized to exist'. A negative existential proposition is as much existential as is a positive existential one.

The problem of instantiation does not, therefore, arise because of the PV being an existential proposition. However, a feature of the *vyāpti* also plays an important role in fortifying an inference in this way namely, that the formulation of a *vyāpti* must always include an unquestionable instance of its truth, a case which instantiates, or exemplifies, the *vyāpti*'s truth in a particular case. The appended example shows that it is not just an assumption but a fact that the *vyāpti* has instantiations, that there are cases it applies to. Therefore, the logical role of the example needs to be given its due importance. Since the logic of SA and PA, or that of SPA and VPA is the same, as shown in the previous chapters, in the discussion that follows I shall use examples only of the SPA (*Sādharmyavat Parārarthānumāna*) form, that is, of similarity-based inference for someone else.

2. The Justification for Appending an Example to the *Vyāpti*

The *vyāpti*-component of the HV in any form of PA, SPA or VPA is appended with a suitable example. In the SPA form of the smoke-fire inference, the example of a kitchen illustrates or instantiates the *vyāpti* since a kitchen is a place where, when smoke is present, fire too is present. In the VPA form of the same inference, the example of a pond instantiates the *vyāpti* because a pond is a place where since fire is absent, smoke is also absent. By definition, an example is veridical, which means that only a veridical example is permissible. It is veridical, or authentic, DU says, because it has been procured by the use of a valid means of cognition (*pramāṇa*).[2] It is a concrete case in which the *vyāpti* has actually been found to hold good. It has to be such a case because only then can it illustrate to the demonstratee or respondent (*prativādī*) of the PA

[2]*Vyāptisādhanasya pramānasya visayo dṛṣṭāntah. ...*
Sādhyadharmiṇoanyo dṛṣṭānta ityarthah. Dṛṣṭa
iti pramāṇena niścitah.
SNS, NBT, p. 195.
An example is one of the things in respect of which the universal concomitance between logical reason and the inferred object has been validly proven. ... (Therefore) it has to be different from the thing, the locus, of which the inferred object is being proven to be true. '*Drsta*' in '*drstanta*' means 'definitely proven by a valid means of cognition' ('and not known by visual perception', as its etymology suggests).

concerned that the *vyāpti* appealed to is empirically true. Therefore it has to be unquestionable, and also a familiar case with which the demonstratee is expected to be well-acquainted. It must be different, DU rightly points out, from the object in which the presence of the inferred object is being proven by the inference whose *vyāpti* it is used to exemplify. For example, in the SPA already mentioned,

> Wherever there is smoke, there is fire, for instance, in a kitchen, and there is smoke on that hill,

a kitchen has been referred to exemplify the universal concomitance between smoke and fire. This work of exemplification cannot be done by mentioning as an example the very hill on which the presence of fire is being proven here. To do that would make the reasoning in a way circular. Therefore, DU says that the locus of the inference, the object in which the *sādhya* is being proven to be present (*sādhyadharmī*) cannot itself be mentioned as an example, or an instantiation of the *vyāpti* concerned. The fate of the locus is yet to be decided in respect of its having fire. Therefore, the validity of the ground, the *vyāpti*, offered to prove that it has, cannot be illustrated by offering the self-same hill, the locus itself, as an instantiation of the latter. Only something else, which is an indisputable case of the empirical truth of the *vyāpti*, therefore, can be mentioned as a suitable example.

DK does not give a detailed, separate account of the nature of a genuine or permissible example, nor of the fallacies or blemishes which may result in an inference on account of its containing a defective example. He does not highlight its role as much as some *Nyāya* logicians do.

His stand is that he has already given an account of the three-featured *hetu*. The statement of the three-featured *hetu*, the HV, is alone sufficient to yield the conclusion. Nothing else is required.

The statement of an example is not a separate constituent of the HV, separate in the sense of being a constituent other than any of the *hetu*'s three features. Therefore, no separate discussion of the example, in addition to that of the *hetu*'s three features, is required. What a proper example is or could be is clear, or known *eo ipso*, from just knowing what the three features of the *hetu* are.[3]

[3]*Trirūpo heturuktah. Tāvatā cārthapratītiriti na pṛthagdṛṣṭānto nāma sādhanāvayavah kaścit tena nāsya lakṣaṇam pṛthag ucyate gatārthvāt.*

SNS, NB, p. 339.121.

The three features of the logical reason have been stated. From their statement alone, the inferred object is known. Therefore, there is no other constituent of the statement of

DK further explains his considering a separate, independent treatment of the role of an example uncalled for. The main point which he makes is that the HV has to be fully stated, and to do that we have to state that the *hetu* is: (a) necessarily present in the locus, (b) present only in things similar to the locus, and (c) never present in things dissimilar to the locus. We state (b) in the *vyāpti* of an SPA, and (c) in that of a VPA, as the latter is a transpositive of the former. To state the (b) feature we use a positive *vyāpti* and to make this *vyāpti* clear, convincing, or appealing, we append it with an instance in which, when the *hetu* is present, the *sādhya* is also present. We cannot perform this job well without using a proper example. Similarly, to state the (c) feature we use a negative *vyāpti*, the transpositive of the former, and to make it clear, convincing, etc. we append it with an instance in which, since the *sādhya* is absent, the *hetu* too is absent. This job too we cannot successfully do without using an appropriate example. Therefore, we need an example to make clearly convincing features (b) and (c) of the *hetu*, and this is all that an example can and ought to do: It enables us to convincingly assert the features (b) and (c), and does nothing else. This is clear from our use of it in the HV. Since this is its sole function, or utility, after mentioning it in the HV, nothing else is to be done. No separate discussion of its role is needed because what its role is, is clear from its mention in the HV.

He illustrates what has been said above by giving some cases of stating the HV in SPA and VPA. When we mention a KH, he says, for example, the presence of smoke to infer the presence of fire, the cause of the former, we say 'Wherever there is smoke, there is fire, as in a kitchen'. We say it transpositively as 'Wherever there is no fire, there is no smoke, as in a pond'. The former *vyāpti* with the help of its instantiation in a kitchen, asserts in a convincing way the presence of the KH (smoke) in things similar to the locus, and the latter *vyāpti*, with the help of its instantiation in a pond, asserts in an equally convincing way the absence of the KH in things dissimilar to the locus. Similarly, when we use an SH, for example the property of having been produced by some human effort (*kṛtakatva*) as the SH for inferring non-eternality (*anityatā*), we say 'Whatever is a product, is non-eternal, for instance, a jar'. We say it transpositively as 'Whatever is eternal, is a non-product (*akṛtaka*), for instance, the sky'. Here too, the two examples, those of a jar and the sky, perform the same role which is performed by the examples in the above case of using a KH to infer the cause of the KH.

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the logical reason called 'example'. Consequently, the concept of example having already been characterized has not been separately characterized (in the very process of characterizing the logical reason's three features).

Unless we adopt the positive and negative, SPA and VPA modes of stating the *vyāpti* along with an appropriate example in each case, we cannot show the presence of the *hetu* only in the similar (*sapakṣa*) and its absence in the dissimilar (*asapakṣa*). That is, we cannot otherwise show that the presence of the *hetu* necessarily implies that of the *sādhya* and the absence of the latter that of the former. When we have done all this, we have also shown the role which the use of an example (*dṛṣṭānta*) plays in an inference. This is so because its only role is to illustrate, or make clearly visible, the above two features of the *hetu* by bringing to our notice one concrete, real, instance which illustrates the presence of the *hetu* in things similar to the locus and another instance which illustrates the absence of the *hetu* in things dissimilar to the locus. There is no other function which the example has to perform. Therefore, DU adds, the master is justified in not adding a separate discussion of its role in inference, and in not treating it as another, a fourth, component of the HV. DU makes it clear that DK denies neither its importance, nor considers the discussion of its role useless. He only denies the justification of according to it a separate discussion, that is, one in addition to the discussion of the three features of the logical reason.[4]

DU elaborates further DK's position by adding that only the general features of a *hetu* are indicated when it is said that it is present only in the similar (*sapakṣa*) and never present in the dissimilar (*asapakṣa*). These are the features of *hetus* of all types. But when a KH is said to be present only when its cause is present, and never present when the cause is absent, the nature of this type of *hetu* is adumbrated in a more specific way because being effectuated by its cause and to exist never without it is the specific or distinctive nature of an effect, a KH. To know that something is an effect of something else is to know that the former can exist only where the latter exists and nowhere the latter does not exist. Similar is the case with the specification that by its very existence, an SH implies the existence of the *sādhya*, and by its very non-existence, the latter implies the non-

[4]*Tasmād dṛṣṭāntam antareṇa na hetor anvayo vyatireko vā śakyo darśayitum. Ato heturūpākhyānād eva hetor vyāptisādhanasya pramāṇasya darśakah sādharmya dṛṣṭāntaḥ. Prasiddhavyāptikasya sādhyābhāve hetvabhāvapradarśanād vaidharmyadṛṣṭānta upādeya iti ca darśitam bhavati.*

SNS, NBT, p. 346 (see pp. 339–47).

Thus, without the use of an example, the logical reason's presence in a thing similar to the locus, or its absence in a thing dissimilar to the locus, cannot be shown. Therefore, in characterizing the nature of the logical reason, a positive example, exhibitive of the validly established relation of invariable concomitance of the logical reason with the inferred object is to be given. Of such a logical reason, it is (also) necessary to give a negative example showing the absence of the logical reason where the inferred object is absent.

existence of the former. When these things are known of the KH and SH, the generic properties of a *hetu*—its presence only in a *sapakṣa* and necessary absence in a *vipakṣa*—are comprehended in a more realistic, or concrete, manner. When full specification of the distinctive properties, say, of the KH, smoke, is done as:

> Wherever there is smoke, there is fire,
> as in a kitchen, and wherever there
> is no fire, there is no smoke, as in a pond

stating it this way brings home to the addressee more clearly the specific features of a KH's presence in only things similar to, and necessary absence in things dissimilar to, the locus. The addition of the example, 'as in a pond' of its absence in the dissimilar, shows that the invariable relation of effecthood (*kāryatā*) between smoke and fire has been established by the use of an appropriate *pramāṇa*, by a valid means of cognition, fit for doing that. That is, it is based on a valid cognition of several actual positive instances in which, when smoke is present, fire is present, *like* that of a kitchen, and of several actual negative instances in which, when fire is absent, smoke too is absent, like that of a pond. It is not at all suggested here that it has been established only on the basis of the positive instance of a kitchen and the negative instance of a pond. The case with an SH is similar. The invariable concomitance between producthood (*kṛtakatva*) and non-eternality (*anityatā*) is expressed by saying that:

> Whatever is a product (*kṛtaka*) is non-eternal (*anitya*), as is a jar, and whatever is eternal (*nitya*) is not a product (*kṛtaka*), as is the sky.

Here too, the purpose of the example-clause, 'as is a jar', in the positive formulation and 'as is the sky' in the negative formulation is the same. The mention of a jar and of the sky is made only to give an idea of the ilk of the relevant instances taken into account in establishing the universal proposition 'Whatever is a product, is non-eternal', and in no way to suggest that the latter has been established on the basis of these two instances alone. Without taking into account such actual instances, both positive and negative, that is, instances of the presence of the inferred object when the logical reason is present, and those of the absence of the logical reason when the inferred object is absent, it cannot be proved that the logical reason is always present in things similar to the locus (*sapakṣa*) and always absent in things dissimilar to the locus (*vipakṣa*, or *asapakṣa*).

Anything to be a *hetu* has to be, by definition, present only in every

sapakṣa and absent in every *vipakṣa*. This means that a *hetu* cannot be established without the assistance of, or without being supported by appropriate examples. Therefore, when a *hetu* has been established, or a true HV has been adequately formulated, it means that there do exist appropriate, confirmative instances and that their importance has been properly recognized. Consequently, it is not at all necessary to discuss separately the importance of an example in an inference, or to add a separate premise, in addition to the statement of the three-featured *hetu* (*trirūpalingākhyāna*) to the effect that such and such an object is an example of the *sādhya*'s presence when the *hetu* is present, or of the *hetu*'s absence when the *sādhya* is absent.[5] For the same reason it is not necessary to discuss inferential errors arising out of the use of an erroneous or defective example of what may be called a non-genuine, or a pseudo-example.[6] Every inferential fallacy is a case of the use of a faulty, fallacious, or deceptive *hetu*, of a *hetu*-fallacy (*hetvābhāsa*) in DK's logical system. And the use of an example is the part of the use of a *hetu*. Therefore, the general discussion of inferential fallacies of the ways in which a *hetu* can be a non-permissible *hetu*, or a mis-*hetu* would automatically include inferential errors caused by the use of a non-permissible, or non-relevant example, and thereby make unnecessary any separate discussion of the ways in which the use of an example may go wrong.

The purpose of including an example in a HV cannot be to prove to the demonstratee of the inference the truth of the *vyāpti*, the example instantiates or exemplifies. One example cannot prove the truth of a universal proposition which any *vyāpti* is. If one says that it can, then many false universal propositions would have to be accepted as true. For example, one can say:

> Whoever is a great logician, is a
> bachelor, for instance, Dharmakīrti,
> and whoever is not a bachelor is
> not a great logician, for instance
> Yājñavalkya.

Obviously, the above *vyāpti* is false. But though one example cannot prove the truth of a universal proposition, one counter-example can prove

[5]Ibid., pp. 339–48.
[6]*Etenaiva dṛṣṭāntadoṣā api nirastā bhavanti.*
SNS, NB, p. 347.123.
Thereby the discussion of the errors of exemplification also is rendered unnecessary.

its falsity. For example, the above *vyāpti* can be proved false by mentioning the counter-example of Gangeśa who is a great logician but not a bachelor.

3. Example as Exhibitive of the Inductive Character of the *Vyāpti*

Neither DK, nor DU, nor does any other classical Indian logician, claim that the example in the HV is given to prove the truth of the universal proposition it exemplifies. It can, DU says, only indicate that the *vyāpti* in the HV has been formulated on the basis of confirmative or supporting instances.

This would mean that the *vyāpti* is an inductive generalization from such instances. It seems to me that DK and DU both, take it to be an inductive generalization. But then it cannot claim to be uncontradictable or never contradicted by experience (*avisamvādī*) which it should be in order to be for DK and DU, a piece of knowledge. It can claim to have then, being an induction, only probability which howsoever high it may be, would not amount to absolute certainty or uncontradictability by experience. And then the conclusion drawn on its basis would also not be uncontradictable by experience. This would imply that inference, which necessarily involves the use of a *vyāpti* is not a *pramāṇa*, or not a *pramāṇa* of the type DK holds it to be because one of the features of a *pramāṇa*, for him, is that it is, or yields, knowledge which is never contradicted by experience. If inference is conceded to yield only probable knowledge, then even the *Cārvāka* can accept it as a source of knowledge. It is wrong to interpret his position as a rejection of inference. He rejects only the theory of inference which makes *vyāpti* a necessary constituent of every inference, claims it to be necessarily true, and therefore that the conclusion drawn on its basis is also necessarily true. To reject a theory of inference is quite different from rejecting inference as a source of knowledge, just as to reject the theory of causation, which holds the cause–effect relation to be one of necessitation is not the same thing as rejecting the reality of causation. One may accept that certain things are causally related but interpret causal relation as one of empirical succession, or constant conjunction.

In DK's logical theory, inference can be claimed to yield knowledge uncontradictable by experience only if the HV is so uncontradictable which it cannot be if its *vyāpti* is an inductive generalization as DU interprets DK's conception of it. An inductive proposition may be called uncontradictable if one considers it as *Naiyāyikas* do to be the assertion

of a necessary relation between two universals, or concepts, cognized in some sort of a perception of how one universal is related to another, for example, by perceiving in instances of fire and of smoke how the universal of smokeness (*dhūmatva*) present in the former is related to that of fireness (*agnitva*) present in the latter. A *Naiyāyika* can hold this position because he holds that universals are real and that there is an extraordinary kind of perception in which universals and their relations are cognized. They call it *sāmānya-lakṣaṇa pratyakṣa* (perception of universals or concepts). DK or any other Buddhist logician cannot admit this kind of perception or cognition of a universal proposition, which a *vyāpti* is, because Buddhists do not admit the reality of universals or concepts. It is not suggested here that the *Nyāya* view is free from all problems. It has some really tricky ones, but this is not the place to talk about them.

For a Buddhist logician, there is no other way available for arriving at a universal proposition except by inductive generalization from individual instances. DU seems to realize this truth when he characterizes the role of instances in establishing a universal proposition asserting invariable concomitance between an SH and its *sādhya*, that is, the *vyāpti* in the complete statement of a logical reason which is identical with the object inferred on the basis of it, technically, the *Svabhāva hetu vākya* (SHV). According to him, instances play here the same kind of role which they play in the establishment of a universal proposition asserting invariable concomitance between an effect and its cause, the *vyapti* in the complete statement of a KH of an effect as the *hetu*, technically, the *Kārya hetu vākya* (KHV). On the basis of finding several instances of *Śimśapā*s' being trees, and of non-trees' being non-*Śimśapā*s, he says, we consider a plant's just being what it is, a *Śimpśapā*, to be a logical reason for its being a tree. We express it as 'Whatever is a *Śimśapā*, is a tree', and transpositively as 'Whatever is not a tree is not a *Śimśapā*'.

That such universal propositions cannot be explained as inductive generalizations has already been shown. It is not, as it is in the case of an induction, that we first know that x is a *Śimśapā*, and then that it is a tree simply because of its being a *Śimśapā*, and after inspecting several such instances of *Śimśapā*s' being trees, and of non-trees' being non-*Śimśapā*s, that we arrive at 'Whatever is a *Śimśapā* is a tree and whatever is not a tree is not a *Śimśapa*'. It is not just possible to know that x is a *Śimśapā* without at the same time knowing that it is also a tree because to be a *Śimśapā* is to be a particular kind of tree, just as to be a produced, or caused, object is to have a beginning and therefore to be non-eternal (because to be eternal is to have neither a beginning, nor an end). There is nothing wrong in calling a *vyāpti* an induction. But doing that creates a problem for

Buddhist and non-Buddhist Indian logicians because they consider *vyāptis* to be uncontradictably or necessarily true. This they have to do because they consider inference to be a giver of incontrovertible knowledge. The *Cārvāka* had the insight that this cannot be done: If a source of knowledge has to give incontrovertible knowledge, and inference has to involve the use of a *vyāpti*, a universal empirical proposition which cannot be incontrovertibly true, then inference cannot be a *pramāṇa*. It cannot be because the incontrovertibility of its conclusion cannot be guaranteed. It cannot be because the incontrovertibility of the *vyāpti* occurring in it as a premise cannot be guaranteed.

An analytic, that is, analytically true *vyāpti* would let the HV in which it occurs as a premise, yield an incontrovertible conclusion but would also make the conclusion analytic, that is, devoid of any new knowledge. This too would be unacceptable to DK because, being a *pramāṇa*, inference must yield knowledge, which besides being uncontradicted by experience (*avisamvādaka*) must also be knowledge of an object not already known (*anadhigatārthabodhaka*).

4. A Consequential Dilemma

We have reached here a point at which it is difficult not to see the dilemma starting at DK's logic through a window in his epistemology, or at his epistemology through a window in his logic.

If *pramāṇa* means (or yields) knowledge which is uncontradicted by experience and whose object has not already been known and inference is what DK says it is, then inference is not a *pramāṇa*. And, if inference is admitted to be a *pramāṇa*, then *pramāṇa* cannot be what DK defines it to be. Any worthwhile solution or resolution of the dilemma cannot obviously be had by a minor tinkering here or there in DK's theory of inference. As the observations which have been made so far in this work suggest, to make logic, or particularly DK's theory of inference, a happy home both for knowledge (*samyak jñana*) and inference (*anumāna*), it seems necessary to do both of the following.

Firstly, tone down the rigour of the requirement that to be right knowledge (*samyak jñāna*), a cognition must be uncontradictable by experience (*avisamvādaka*), a requirement which almost verges on requiring the cognition to be *a priori* or analytic. No empirical knowledge can fulfil this requirement, and knowledge has to be empirical in DK's theory because only empirical knowledge can be required to be a cognition of something not already known in any way which is his other criterion of right knowledge. Secondly, deductive inference can yield an incontro-

vertible conclusion but it cannot give a piece of new knowledge. Therefore, a division of labour has to be effected in assigning their task to deductive and inductive inferences, assigning the task of yielding an incontrovertible conclusion to deductive inferences which AHI, SHI, and KHI are and the task of yielding new knowledge to inductive inferences. A theory of inductive inference can be woven out of DK's KHI by making effect–cause, or cause–effect, inference less definitional and more empirical and thereby enabling it to yield conclusions which may have the highest degree of probability attainable under the circumstances. This can be done only by freeing KHI from the requirement of yielding controvertible conclusions. AHI and SHI work the way they do almost exclusively because they are defined to work that way. Therefore, they may be left as specimens of deductive reasoning and as such not required to yield any knowledge about a thing not yet known.

A champion of the received, the orthodox, interpretation, of classical Indian logic may say that the dilemma posed above is unreal. It is based on the assumption that an inference cannot be both deductive and inductive. If it is deductive, it can give an incontrovertible conclusion but not an informative one, and if it is inductive, it can give an informative conclusion but not an incontrovertible one. But inference as conceived in Indian and therefore in DK's logic is both deductive and inductive, or something *sui generis* not describable as deductive or inductive. Therefore, it can yield a conclusion which is both incontrovertible and information-giving, that is, a piece of right knowledge (*samyak jñāna*) as defined, or understood by DK. This is an old view which owes its ancestry to the interpretation of Indian logic by some highly-placed and influential writers on Indian philosophy and still has its hold on the minds of a large number of young and even some senior students and teachers of Indian philosophy. Therefore, it needs to be examined in some detail. That will be done in Chapter 13.

TWELVE

Inference for Someone Else and Aristotelian Syllogism

1. The Received View

Stcherbatsky[1] considers inference for someone else (PA), as adumbrated by Buddhist logicians, including DK and DU, to have the same form as that of the first mood of the first figure of Aristotle's categorical syllogism. He calls PA syllogism and names the chapter devoted to its discussion in his book 'Syllogism'. On the pattern of 'Aristotelian syllogism', he uses the term 'Buddhist syllogism' for the Buddhist version of PA. He accordingly uses the relevant Aristotelian terms for those which are, according to him, their counterparts in Buddhist PA. For example, 'minor term' or the locus of the inference (*pakṣa*), 'major term' for the inferred for inferable object or property (*sādhya*), 'middle term' for the logical reason (*hetu*), 'minor premise' for the proposition which affirms the existence of the logical reason in the locus (*pakṣa vākya* [PV]), and 'major premise' for the universal proposition asserting the invariable concomitance between the logical reason and the inferred thing (*vyāpti*).

He is not the only one who adopts this procedure. Almost all modern Indian writers on classical Indian philosophy or logic like S.C. Vidyabhusana, S.N. Dasgupta, S. Radhakrishnan, D.M. Datta, S.C. Chatterjee and M. Hiriyanna,[2] call the type of inference which exemplifies, according to

[1]BL I, pp. 275–76.

[2]S.C. Vidyabhusana, *A History of Indian Logic* (1988), pp. 60–61;

any Indian school of philosophy, non-Buddhist or Buddhist, PA, syllogism and use Aristotelian terms in characterizing it. In common philosophical parlance too, PA has consequently acquired the common name 'Indian syllogism'.

It is not that these writers do not admit any dissimilarity between the Indian PA and syllogism when they claim that these are similar. But to me they seem to have misperceived both the respect in which they are similar and the respect in which they are dissimilar. They claim (a) that they are similar in having a similar formal structure, and some of them hold that PA's formal structure is similar to Barbara's and that (b) they are dissimilar because they function differently as pieces of reasoning. Barbara, or any syllogism, is a purely deductive piece of reasoning, while PA is both, deductive and inductive reasonings mixed in one piece. A valid syllogism is guaranteed only to be formally valid; it may or may not be materially valid as well. A (valid) PA, on the other hand, is guaranteed to be both formally and materially valid.

It seems to me that both the claims are untenable. PA and Barbara (or any other syllogism) are claimed to be similar in a way that they are not similar, nor are they dissimilar in the respect in which they are claimed to be dissimilar. As these claims have been made of both Buddhist and non-Buddhist accounts of PA, I, therefore, will examine each in a general way. My comments on their defence would therefore be applicable equally well to all theories of PA (excluding, of course, the *Cārvaka*'s). They have been made so frequently and taken to be valid so unquestioningly that they have become part of the philosophical folklore about Indian logic being included in almost all books on classical Indian philosophy. This fact is an additional reason for my discussing them in some detail.

2. The Basics of PA

As already discussed, according to DK, PA is nothing but a complete statement of the *hetu vākya* (HV), or, of the three-featured logical reason. It is thus the complete conjunction of its premises having three conjuncts, the first stating that it is necessarily present in the locus, the second that it is present only in the similar to the locus and the third

S.N. Dasgupta, *A History of Indian Philosophy*, Vol. I (1992), pp. 343–54;
S. Radhakrisnan, *Indian Philosophy*, Vol. II (1962), pp. 82–84;
D.M. Datta, *Six Ways of Knowing* (1972), pp. 217–20;
S.C. Chatterjee, *The Nyaya Theory of Knowledge* (1950), pp. 265–80;
M. Hiriyanna, *The Essentials of Indian Philosophy* (1932), pp. 99–102.

that it is never present in the dissimilar to the locus. The conclusion is not to be mentioned because it is obviously entailed by the HV. For example,

(a) That mountain has smoke,
(b) Whatever has smoke has fire, for example, a kitchen, and
(c) whatever does not have fire does not have smoke, for example, a pond,

is a complete PA and its conclusion 'That mountain has smoke' does not need to be mentioned.

It has already been shown that (b) and (c) are equivalent because (c) is only the transpositive of (b). It says negatively what (b) says affirmatively. Therefore, it is not necessary to retain both of them. One of the two can without any loss to the argument be dropped. Or, we can have two arguments in one of which (a) and (b) occur, and in the other (a) and (c), though the conclusion would be the same. What (a) and (b) would entail would be identical with what (a) and (c) would, because (b) and (c) are equivalent. We have seen that DK calls the first argument similarity-based (*Sādharmyavat*) and the second dissimilarity-based (*Vaidharmyavat*). He does this because (b) in the former, states that the *hetu* is present only in a *sapakṣa*, that is, in an object like a kitchen, which is *sadharmī* of, that is, similar to (*sadharmī* of) the locus (*pakṣa*) in having the same feature (*dharma*), that is, being fiery, and (c) in the latter states that the *hetu* is never present in a thing dissimilar to *vidharmi*, or *vipakṣa*, of the locus, like a pond because of the pond's never being fiery. Since the HV is the conjunction of premises, each one of its conjuncts can be separated from the other or others and stated separately by using the rule of simplification on it. By separating the conjuncts and adding to them their conclusion, a similarity-based (*Sādharmyavat*) and a dissimilarity-based (*Vaidharmyavat*) inference, SPA and VPA, can be stated as follows:

SPA That mountain has smoke.
Whatever has smoke, has fire, for example, a kitchen.
Therefore, that mountain has fire.
VPA That mountain has smoke.
Whatever has no fire, has no smoke, for example, a pond.
Therefore, that mountain has smoke.

Since SPA and VPA are equivalent arguments or inferences what can be said of one can also be said of the other. Therefore, I will use only the first, SPA to examine the claim made by several scholars that PA is in

form the same as Barbara. To make its appearance as similar as possible I will change the order of its premises and state it as follows:

Whatever has smoke, has fire, for example, a kitchen.
That mountain has smoke
Therefore, that mountain has fire.

Changing the order of the premises of any argument is permissible because their order does not at all matter as far as their entailing (or not entailing) the conclusion is concerned. The conclusion of an argument is entailed, as has been previously shown, by the conjunction of all the premises. Conjunction is commutative, and therefore the conjuncts of a conjunctive compound can be arranged in more than one way, depending on the number of conjuncts. Therefore, Aristotle's exercise of determining the valid moods of a syllogism was not worth the trouble, since moods are determined by the order of premises which has nothing to do with the validity or invalidity of the arguments in which those premises occur.

3. PA as Barbara

The above SPA would be accepted as a valid and properly formed PA by all classical Indian logicians. It is this form which modern interpreters have in mind when they call it a case of Barbara. Since it is accepted by all classical Indian logicians who accept inference as a *pramāṇa* and PA as a subdivision of it, modern writers on Indian philosophy or logic call it the Indian syllogism. It is the only form which PA is said to have. VPA which appears different from it is really not different. Since PA is claimed to be in the form of Barbara, the natural next step for modern interpreters to take is to claim that Indian syllogism has only one form which is the form of Barbara. Generally this claim is made in the context of the *Nyāya* theory of PA. But the *Nyāya* and non-*Nyaya* thinkers do not differ as far as the basic logical form of PA is concerned. This is the reason because of which it is offered as a claim about all Indian theories of PA, or about the 'Indian syllogism'.

Radhakrishnan very clearly and candidly affirms that the *Naivāyika* did not attach much importance to the different positions in which the middle term might occur. He regarded Barbara as typical of all syllogistic reasoning. The use of positive and negative instances inclined him to view the affirmative and the negative general propositions as mutually involved.[3]

[3]Radhakrishnan, ibid., p. 83.

D.M. Datta holds that, as per the *Nyāya* school, a PA which has as its major premise a universal proposition asserting the absence of the logical reason wherever the inferred object is absent (a *Vyatireki vyāpti*, or, in DK's terminology, a *Vaidharmyavat vyāpti*), has the following form:

(D) No non-P is M
All S is M
Therefore, all S is P.

This argument, he says, 'corresponds to none of the valid forms of Western logic' since it violates the rule of Western logic according to which the conclusion must be negative, if any one of its premises is negative. To change it into a valid form, we must therefore make the major premise affirmative or make the conclusion negative. But the first alternative would altogether defeat the underlying object of the *vyatirekī* which is claimed to have a negative major (expressing invariable concomitance between the absence of the major term and the absence of the middle term), 'We must therefore choose the second alternative and state the conclusion in the negative form. The form of the inference would then be:

(D_1) No non-P is M
All S is M
No S is non-P.

If non-P be considered the major term here, the mood would be Cesare in the second figure. We find, therefore, that if the *Naiyikas* are to reduce their syllogism to valid Western forms, they must admit two figures, the first and the second, and two moods, Barbara and Cesare.'[4]

Datta thus seems to differ from others whose claim is that Indian syllogism has only one form Barbara. But Datta does not succeed in disproving their claim. Rather, if we examine his example (D), its first premise 'No non-P is M' is equivalent to 'All M is P' because 'All M is P' is the transpositive of 'No non-P is M', and therefore it can be put in the place of the latter. If we make the replacement, then (D) would become:

(D_2) All M is P
All S is M
∴ All S is P.

(D_2) is quite obviously in the form Barbara and to get (D_2) out of (D), only elementary logic has been used. In doing that, nothing has been done which is against the spirit of classical Indian logic. We have

[4]D.M. Datta, ibid., pp. 228–29.

already seen that DK and DU very clearly admit that an affirmative *vyāpti* of the form 'Whatever has smoke has fire' and a negative one of the form 'Whatever has no fire, has no smoke' are semantically equivalent and are different only in their grammatical forms. It is the affirmative *vyāpti* which *Nyāya* calls '*anvayī*', that is, one which expresses invariable concomitance between the presence of the *hetu* and the presence of the *sādhya;* similarly, it is the negative *vyāpti* which it calls '*vyatirekī*', that is, one which expresses invariable concomitance between the absence of the *sādhya* and the absence of the *hetu*. Datta's 'No non-P is M' is equivalent to 'Nothing which has no P has M', and therefore to 'Whatever has no P has no M'. The latter is of the same form as 'Whatever has no fire has no smoke' which is equivalent to 'Whatever has smoke has fire'. 'No non-P is M', or 'Whatever has no P, has no M' is thus equivalent to 'All M is P'. Radhakrishnan recognises this point when he says, as already quoted, that the *Naiyāyika* considers 'the affirmative and negative general propositions as mutually involved', that is, as implying each other, or as equivalent to each other,

To make (D) correspond to a valid form of Western logic and avoid violating the latter's rule that the conclusion of an argument must be negative if any one of its premises is negative, therefore, it is not at all necessary that (D) is reduced to (D1) which is Cesare. This means that there is no need for a *Naiyāyika*, or any other Indian logician, to admit that the form of PA is that of Barbara or that of Cesare, and not of Barbara alone, if otherwise there is no objection to calling PA formally similar to Barbara. It is not being suggested here that it, in fact, is similar in form to Barabara. Rather, it will be soon shown that it is not.

Datta has been led to hold that a PA with a negative (*vyatirekī*) *vyāpti* can be put in the form of Cesare and not in that of Barbara because in this type of PA, one premise, the negative (*vyatireki*) *vyāpti*, is a negative proposition, and according to Western logic if one premise is negative, the conclusion must be negative. Therefore, this case, he says, cannot be a case of Barbara because the conclusion of Barbara is affirmative. But this is not always the case. In truth-functional propositional logic, it is valid to deduce 'Q' from 'P or Q and not-P'. In a disjunctive argument of this form, a disjunct of the affirmative disjunctive premise can be inferred only if the other premise is a denial of its remaining disjunct, that is, only if one premise is affirmative and the other negative.

4. Undeclared Use of the Law of Double Negation in VPA

Datta calls the rule—that the conclusion of an argument must be negative if any one of its premises is negative—a rule of Western logic. By 'Western

logic' he perhaps means, I think, the Aristotelian syllogism. He would be right in saying that because this rule is one of the basic syllogistic rules. His example of the type of argument which according to Indian logic is valid but violates this rule has a *vyāpti* which asserts the invariable absence of the logical reason at any place where the absence is of the inferred object. This would be an inference of the VPA form in DK's theory, and Datta, after the *Nyāya*, calls it *vyatirekī*. The syllogistic form of this type of inference, he says rightly, would be:

(D) No non-P is M
All S is M
Therefore, All S is P.

Let us have an example from Indian logic in the Indian form, but as close to Datta's (D) as possible, to examine whether or not it violates the syllogistic rule he says it does:

(D3) 1. Whatever is non-fiery, is non-smoky
2. That mountain is smoky
3. Therefore, that mountain is fiery.

A more natural way to express the above argument would be:

(D4) 1. Whatever does not have fire, does not have smoke
2. That mountain has smoke
3. Therefore, that mountain has fire.

I have put it as (D3) to make it look similar to Datta's (D) which is in the form of Cesare. It is easy to see, Datta would say, that (D3) can be rephrased in the form of (D). The second premise of (D3) (or of [D4]) would give some problem in expressing it in the form of (D), which will be shown a little later. But let us grant that Datta's (D) represents the formal structure of (D3) and (D4), and then examine if (D3) or (D4) really contravenes the syllogistic rule Datta says it contravenes without being invalid. Anyone who accepts the rule that the conclusion of an argument must be negative if any one of its premises is negative, may admit that the conclusion of (D3) should, at first blush, be:

Therefore, that mountain is
not non-fiery,

because the predicate 'non-smoky' of 1 is denied in 2, since 'smoky' of 2 is the denial of 'non-smoky' of 1. But according to the law of double

negation 'not non-fiery' is equivalent to 'fiery'. Therefore, the conclusion of (D3) can quite correctly, without contravening the rule of a negative premise's entailing a negative conclusion, can be expressed in the affirmative form:

Therefore, that mountain is fiery.

This is, in fact, what classical Indian logicians, *Naiyāyikas* and non-*Naiyāyikas* do. Since I am concerned here with only DK's logical theory, I would say—and it can be said, with the same amount of legitimacy of *Naiyāyikas* whom Datta has mainly in mind—that DK does not violate the above-mentioned rule in formulating his doctrine of VPA, which has an affirmative conclusion even though one of the conjuncts of its HV, the *vyāpti*, that is, a premise of it, is a negative proposition. The conclusion becomes affirmative because of the undeclared use of the law of double negation. There is nothing wrong in his not mentioning its use because in such inferences the two negations cancelling each other in the conclusion is very obvious. He who does not consider it necessary to mention the conclusion of a VPA, or SPA, can quite naturally think it unnecessary to explain the affirmativeness of the conclusion of a VPA by applying to it the law of double negation.

It would be unfair to reject this interpretation on the ground that Indian logicians were not aware of the law of double negation. It would certainly be untrue to say it of DK. That he was aware of it and used it is clear from the very definition of right knowledge given by him. DU says, as already discussed, that one of the two essential features of right knowledge, according to him, is its being non-contradicted by experience. Even in *Pramāṇavārtika*, much earlier than *Nyāyabindu*, DK defines right knowledge as non-contradicted by experience (*avisamvādaka*).[5] The very notion of 'being *avisamvādaka*' involves the use of the law of double negation as it means not disconfirmed, or not negated, by experience. Literally it means not being non-concordant with experience (*a* = not + *vi* = non + *samvādaka* = concordant with experience, *avisamvadaka* = not non-concordant with experience). Instead of calling it concordant with experience (*samvādaka*) he calls it not-non-concordant with experience (*avisamvādaka*) by adding two negatives to 'concordant' ('*samvādaka*') to make his claim to its being concordant with experience emphatic. This is a natural way to say something emphatically, as we sometimes

[5]*Pramāṇamavisamvādi jñānam.*
Pramāṇavārtika, 1.3, quoted by SNS, ibid., p. 10.
Cognition, uncontradicted by experience, is (right) knowledge.

say 'It is not unknown to me that ...' instead of saying the plain 'It is known to me that. ...'

5. A Singular Existential Proposition as a Necessary Constituent of PA

Let us, for the sake of the argument, grant that the *hetu* can be called the middle term. Then we have also to grant that in the PA:

> Whatever has smoke, has fire and
> that mountain has smoke,

the middle term 'smoke' occupies in the premises the positions it occupies in Barbara. Let us also agree to call its first conjunct the major premise and the second, minor premise. We can obviously then agree to call the major premise an A proposition. But so also must the minor premise be called and the conclusion, if the argument is to be called an instance of Barbara. The minor premise 'That mountain has fire' and the unmentioned but entailed conclusion 'Therefore, that mountain has fire' both are singular propositions because the subject term 'That mountain' in both of them is a singular term referring only to a particular mountain, or a particular spot in a particular mountain. A singular term claims to refer to one and only individual, using the term 'individual' in a logical sense in which a particular person, object, event, action, etc. is an individual. Therefore, (the mountain called) '*Gauriśankara*', '*Gopal*', 'The present prime minister of India', 'This book', are all singular terms. A singular proposition may be a subject-predicate, or a class-membership proposition. For example, 'That mountain is red with sunlight' is a subject-predicate, while 'That mountain is a health-resort' a class-membership proposition. It may not sometimes be easy to make the distinction but since it is not very crucial for the point I want to make here I will not discuss it in detail. What is important to note is that SPA is a case of Barbara only if we agree to call a singular proposition universal, and therefore a singular affirmative proposition a universal affirmative proposition which an A proposition is.

It is the most prevalent interpretative thesis about PA, SPA or VPA, that it is an instance of Barbara. Let us see if the PA mentioned above can be called a case of Barbara, and thereby examine the tenability of the thesis. The reasoning behind calling it an instance of Barbara is the following:

'Smoke', the *hetu* or the middle term occupies the position of the subject in the major premise and that of the predicate in the minor premise,

as it does in Barbara. Secondly, its major premise, minor premise, and conclusion, all are, it is said, universal affirmative, that is, A propositions and it commits no fallacy. Therefore, it is clearly an instance of Barbara.

6. Singular Proposition not Universal

According to Aristotle, a proposition is universal when its subject term is distributed. A term is distributed when its use in a proposition has been made in such a way that it covers or includes its entire denotation or extension; that is, what has been affirmed, or denied of it in the proposition has been affirmed or denied of all members of it or of all that it denotes or refers to. The obvious indicator of its having been used distributedly is its universal quantification, that is, quantification by 'all', or an equivalent of it. Sometimes, even the context may do that and the quantification may not be explicitly mentioned.

Aristotle and a good number of traditional, that is, Aristotelian logicians consider a singular proposition like 'Socrates is slovenly dressed' universal, that is, an example of an A proposition. According to them, therefore, an argument, one or both of the premises of which are singular affirmative propositions and the middle term occupies the position of the subject in the major and that of the predicate in the minor premise would be a case of AAA, that is, of Barbara because the conclusion too would then be an A proposition. The following examples would illustrate this point:

(i) That slovenly dressed man is quick-witted.
Socrates is that solvenly dressed man.
Therefore, Socrates is quick-witted.

(ii) All slovenly dressed men are quick-witted.
Socrates is slovenly dressed.
Therefore, Socrates is quick-witted.

The example of PA which is being considered here:

Whatever has smoke, has fire.
That mountain has smoke.
Therefore, that mountain has fire,

is like (ii). Its major premise can be taken as an A proposition. Therefore whether or not it is proper to call it a case of Barbara depends on whether or not its minor premise and conclusion can be called an A proposition. That is, whether or not a singular proposition can be called universal.

All, or almost all of modern interpreters of Indian logic have followed Aristotle and traditional Western logicians in calling a singular proposition universal and on that ground they have called a PA of this type an instance of Barbara. It has not occurred to them that the tradition of attributing universality to a singular proposition may be questioned. I want to reopen this issue and to question the logical propriety of calling a singular proposition universal, in spite of the fact that there is a very old and extensive tradition against what I am attempting to do, namely, to show, or at least to make highly plausible, the contrary view that it is not logically fair to give it the status of a universal proposition. Even if I succeed in showing that calling it universal is disputable, I would be satisfied because I would then *eos-ipso* be showing that the claim that PA is a case of Barbara is also disputable, and therefore not obviously valid, as the received interpretation of PA has made us believe.

Aristotle's own treatment of the singular proposition is very casual. Though he treats it as a universal proposition, he does not mention it as a premise, or a conclusion, in the arguments he uses as examples in discussing his theory of the figures and moods of syllogisms. The reason for his indifference to the singular proposition is as Ross puts it, his belief that 'both scientific and dialectical reasoning is for the most part about classes, not about individuals.'[6]

A singular term is the subject of a singular proposition and it claims to refer to one and only one individual. Therefore, a singular proposition is an existential proposition. The singular proposition 'Dharmakīrti is a momentarist' is equivalent to 'There is (or exists) one and only one individual named "Dharmakīrti" and he is a momentarist'.

The negative singular judgement 'Dharmakīrti is not an eternalist' is equivalent to 'There is (or exists) one and only one individual named "Dharmakīrti" and he is not an eternalist'. A universal proposition, on the other hand, is not existential, or to say the same thing, does not have any existential implication. Therefore, if we assert a universal proposition and want also to assert that there exists an unstantiation of it, we have to add to it an appropriate existential proposition. This we do, for example, when we say 'All tax-collectors are corrupt and there are several corrupt tax-collectors in any state.' A singular proposition's being existential and a universal proposition's being non-existential is a very important reason for not calling a singular proposition universal.

If we grant that a universal proposition has an existential implication, that is, it implies an existential proposition, then, as

[6]David Ross, *Aristotle* (1964), p. 30.

Russell[7] points out, from apparently two true universal propositions we can draw a false conclusion. Slightly changing the order of the constituents of Russell's example, from:

All golden mountains are golden
and
All golden mountains are mountains

one can draw the conclusion,

Some mountains are golden.

The above is, according to Aristotelian logic, a valid syllogism, an example of Darapti in Figure III. But it cannot be valid because its conclusion is false. Its true premises have yielded a false conclusion, and such an argument is invalid. This shows that there is something wrong with this argument or inference. That something is according to Russell and other modern logicians, the interpretation of a universal proposition as having an existential implication. If it is interpreted, as per modern logic, as bereft of any existential implication, the above two premises would not yield the conclusion they have been made to yield as per Aristotelian logic. The two premises can be symbolized as follows:

$(x)\ \ (x)\ [(Gx.\ Mx) \supset GX)]$
$(x)\ \ (x)\ [(Gx.\ Mx) \supset Mx)]$

It is obvious that from these two hypotheticals we cannot draw the existential categorical $(\exists x)\ (Mx.\ Gx)$. There is no logical rule to authenticate this sort of inference.

Thirdly, as per Russell again, treating a singular proposition as a universal, one may be tempted to commit a serious logical or ontological error. He thinks Aristotle did commit, or almost committed, this error. The subject of a singular proposition being a singular term is, we have seen, a referring expression in the sense that we can say that there exists the individual it refers to. It may be true or false, but it is logically sound to draw the inference that its referent exists. 'Dharmakīrti is a momentarist' implies that there exists an individual named 'Dharmakīrti'. Without assuming that the individual named 'Dharmakirti' exists we can neither assert that Dharmakīrti is, or that he is not, a momentarist. So is the case with any singular term like 'the author of *Nyāyabindu*', 'that mountain', 'this place', etc.

[7]Bertrand Russell, *History of Western Philosophy* (1946), p. 220.

When one considers a singular proposition, say, 'Socrates is mortal' to be a universal one, like 'All men are mortal', he may be led to think that the universally quantified term 'all men', which occupies the place of the grammatical subject in the universal proposition is its logical subject as well, as is the singular term, Socrates, the logical subject of the singular proposition 'Socrates is mortal' occupying a similar position in it. Carrying the analogy further, he may conclude, Russell says, that "all men" denotes an entity of the same sort as that denoted by "Socrates". This led Aristotle to say that in a sense a species is a substance'. Russell admits Aristotle qualified this conclusion, but still it remains a fact that the analogy was leading or, tempting, him, to commit the error of thinking that classes, or species, exist in some sense. And, Russell adds, some of his followers like Prophyry 'showed less caution.'[8]

Although 'all men' and 'Socrates' occupy grammatically similar positions in the two sentences, 'all men' is not the logical subject of 'All men are mortal', whereas 'Socrates' is the logical subject of 'Socrates is mortal'. This becomes clear when we see that as modern logic interprets a universal proposition, 'All men are mortal' is really equivalent to 'If there is anything which is a man, then that thing is mortal', or more analytically, 'given any x, if x is human then x is mortal'. In this form it is obvious that it is not about all men, unlike 'Socrates is mortal' which is about Socrates. Rather, the former is a hypothetical sentence, without implying that there exists any man. It is not about all men because that term, or any equivalent of it, does not occur in it when it is expanded to reveal its logical structure.

Quine approves of the traditional logician treating a singular proposition as an A proposition. 'This procedure', according to him, 'is artificial but not incorrect; we can construe "Socrates is a man" as "All G are H" where "G" represents "things identical with Socrates"'.[9] Following Quine, we can say that 'Socrates is a man' is equivalent to 'All things identical with Socrates are men'. It can be put symbolically as:

$$(x) \quad [(x = s) \supset (Ms \supset Mx)].$$

Which means for any x, if x is indentical with s (Socrates), then if s is a man, x is a man. In this form the existential import of 'Socrates is a man' has been lost as it is bound to happen when a singular proposition is converted into a universal proposition. But every singular proposition claims to be existential. Quine himself admits that a 'singular term always

[8]Ibid., p. 221.
[9]W.V.O. Quine, *Methods of Logic* (1978), p. 91.

purports to name an entity'.[10] That is, the singular term or the singular proposition in which it occurs as its subject, always makes the existential claim that there is the object named by the term. The claim may not be always, as has been already said, valid. But the existential claim is always present or involved in a singular proposition. Therefore, any transformation of it into a universal proposition would not be its equivalent because a universal proposition makes no claim to any existential involvement or commitment. Therefore, to repeat, a singular proposition cannot be called, or given the status of, a universal proposition simply because it has an existential import which the latter does not have.

7. PA's Structure not Similar to Barbara's

Ordinarily when we quantify a term by 'all', we can also meaningfully quantify it by 'some'. Rather, we use the universal quantifier only where it is also meaningful to use the existential quantifier, and vice versa, though quantifying it one way may yield a true proposition and quantifying it the other way a false one. A singular term when used as the subject of an affirmative (or negative) proposition claims to refer, or refers, to one and only one individual, and whatever is said of it is said of all that it refers to. Therefore, to use it as a subject is to use it to refer to all that it refers to. It cannot be used sometimes to refer to all, and sometimes to some of its referent because it has one and only one referent. It is meaningful to call the use of a term distributed when it is also possible for it to have an undistributed use, as is the case with terms which have, or which may have, more than one referent. But when a term can be used only to refer to all that it stands for, or denotes, and that is one and only one entity, there is no point in calling any use of it distributed. If an examinee is always to pass and never to fail any examination given to him, it is pointless to say that he has passed a particular examination. To say that he has passed it is nothing more, nor less, than saying that he has taken it. Similarly, to say of a singular term that in its use as the subject of a singular proposition it is distributed is nothing more nor less than saying that it is the subject of that proposition. Therefore, I say that there is no point in calling it, or any use of it, distributed. And, therefore, there is no point in calling a singular proposition, in which it occupies the position of its subject, universal. We call a term distributed when we can contrast its disturbed use from another use of it in which it is undistributed, when we can ask whether what has been said of it has been said of all that it refers to, or only of a part of all that

[10]Ibid., p. 212.

it refers to. This shows that a singular term in its use as the subject of a (singular) proposition is outside the zone of terms which can be called distributed or undistributed. Therefore, it would be better not to classify a singular proposition as universal, a singular affirmative proposition as an A proposition, or a singular negative proposition as an E proposition. This would mean that a PA, or SA, in which a singular proposition occurs as a premise, and as its conclusion, cannot be called an instance of Barbara. It seems more reasonable to leave it to itself and not to torture the singular proposition to earn the title of a universal proposition.

Moreover, even if we grant that PA is an instance of Barbara, we would find it difficult to call Barbara an instance of PA because its minor premise cannot perform the job which the minor premise, the PV of a corresponding PA would be required to do. The PV of a PA, we have seen is a singular existential sentence asserting the existence of the logical reason in the locus (*pakṣa*) in which the *sādhya* is inferred to exist. In the instance of Barbara:

(B) B_1 All Buddhists are atheist.
B_2 All momentarists are Buddhist.
Therefore, all momentarists are atheist.

'All momentarists', the subject of B_2, the minor premise cannot be called the *pakṣa* because it is not a localizable object. A *pakṣa* (locus) has to be, we have seen, a localizable object, that is, identifiable as a particular object or individual. It is such an object in which the existence of the *hetu* has been already cognized, for example, the particular mountain referred to by 'That mountain' in the PV of the PA:

PA P_1 Whatever has smoke has fire.
P_2 That mountain has smoke.
Therefore, that mountain has fire.

The quantified subject 'all momentarists' of B_2 in (B) does not designate a *pakṣa*-like object, the referent of a singular term, as the uniquely referring term 'that mountain', the subject of P_2, the PV of the PA, does. Further, as has been shown, B_2 may be true even if there does not exist anyone who is a momentarist, and therefore anyone who is both a momentarist and a Buddhist. But the PV, P_2 of the PA has to be true and it would be true only if the mountain referred to by its subject has smoke, and it would have smoke only if it exists. Therefore, the *pakṣa*, the subject, of a PV, has to be an existent. When DK says that one of the three features of a *hetu* is that it must be present in the *pakṣa*, he makes

it clear that a singular existential statement affirming the existence of the *hetu* in the *pakṣa* must be a conjunct of the HV, that is, a premise in any inference and therefore if any PA. There is no such requirement for the minor premise of Barbara, and the proposition permitted to be its minor premise, a universal one of a certain type, cannot do what a PV is required to do. Therefore, if we interpret a singular proposition as A, we may decide to treat the PA as Barbara, or as similar to Barbara. But we cannot interpret an A proposition, the minor premise of Barbara, as a singular one because the subject of the former is not a uniquely referring term as is the subject of the latter. That 'all mountains', the subject of B_2 is not, and 'that mountain', the subject of P_2 is a uniquely referring term is, as shown above, quite obvious.

It is clear from the above analysis that we cannot call Barbara an instance of PA, or similar to PA, even if we decide to call PA an instance of or similar to Barbara. This would be a very odd logical situation because it would mean we are treating similarity, which is a symmetrical relation, as asymmetrical, since we would be holding that PA is similar to Barbara but Barbara is not similar to PA.

It is not too trivial a point to note here that, in Aristotle's own, or in any other Western logician's discussion of the nature of syllogistic inference, no reference is made to the person for whose cognitive benefit it is drawn or used. A syllogism is a logical tool or technique which can be used for any person's, the user's, or someone else's, clarification, ascertainment, or assessment of some ideas which may be drawn from some others in accordance with a set of rules of procedure. It can be used for any purpose, and the purpose for which a token of it is used, whether desirable or undesirable has nothing to do with its logical validity or invalidity. It is not to be categorized this way or that way, depending on whether it is used for the inferer's, or for someone else's cognitive or non-cognitive benefit. It is not possible to call one token of it SA and another token PA, because reference to the person for whom, or for the purpose of whose cognition it is used, is not at all relevant to its logical characterization.

If PA is to be called, or likened to a particular form of syllogism, say, Barbara, that has to be done only on the basis of formal, or structural, similarity between the two. In the foregoing discussion it has been shown that the two are formally or structurally not similar because the second premise and conclusion of PA are singular propositions whereas those of Barbara are A propositions and that a singular proposition is not indisputably an A proposition. Therefore, it is not fair to say that the form of PA is the same as that of Barbara.

By not calling PA an instance of Barbara we would not lose anything, nor would we do any dishonour to PA. Perhaps the modern interpreters had the feeling that by equating it with an Aristotelian form of deduction, with the perfect mood of the perfect figure of Aristotelian syllogism, they would be giving to it a respectable status. It is high time that we get rid of this prejudice with regard to PA, or *anumāna*, and of a similar prejudice with regard to any classical, or contemporary Indian philosophical theory or concept, *vis-à-vis* its relationship with any non-Indian theory or concept. Doing that is necessary not only for properly understanding and evaluating Indian but also non-Indian philosophies. It would facilitate our doing philosophy philosophically, that is, without any regional bias which generally obstructs one's freedom to see philosophical things as they really are.

To conclude this discussion, there is a good logical reason to leave PA to itself, to remain an inference-pattern of its own kind, without capping its head with Barbara or Cesare, none of which is of the latter's size. There is nothing wrong in using some Western logical terminology in talking about some aspects or features of it. But that terminology does not have to be that of Aristotelian syllogism, or even Aristotelian in a broader sense.

THIRTEEN

Inference for Someone Else and the Deductive–Inductive Distinction

1. Premise–Conclusion Bonds in Deductive and Inductive Inferences

Calling PA an instance of Barbara is wrong, but that does not mean that it is not a form of deduction. It is in fact formal deductive inference with some built-in checks and balances which disallow the use of any false premise, and the deduction of a false conclusion from true premises. It is quite sensible to formulate a theory of deduction with these two ends in view. But instead of emphasizing that these two features of the Indian theory of PA, or *anumāna* as such, make it a distinctive logical theory, modern interpreters 'see its distinctiveness, as already said, in its being both deductive and inductive, or in being a kind of inference to which the distinction between deduction and induction does not apply.

To call PA both deductive and inductive is to make one of the worst kind of confusions because one single piece or unit of inference, which PA is cannot, in point of logic be both deductive and inductive. This is so because the bond between the premises, or evidences, and the conclusion in the two cases are, as already pointed out, of two different types. The premises of a deductive inference, if the inference is valid, entail their conclusion, while those of an inductive inference, if it has been properly conducted, only show that the probability of their conclusion's turning out to be true is greater than that of any one of its contraries'. In no case they entail their conclusion. The same piece of reasoning cannot perform

both the feats which it must do to be both deductive and inductive. It is possible that a reasoning is composite in the sense that the reasoner first arrives at an inductive generalization and then makes deductions from it, or first deduces a conclusion and then examines if there is any inductive evidence in its favour, if it is a general proposition, or tries to verify it perceptually if it is a perceptual proposition. But then he would be playing two kinds of logical or epistemic games one after the other and not a single one which is both deductive and inductive.

An inductive inference cannot be valid in the sense in which a deductive one can be. In the former, a generalization is made on the basis of some premises, or individual instances, in accordance with certain rules, principles, or norms. Since premises do not entail but only confer some amount of probability on their conclusion, the generalization, it is possible that the premises are true and their (inductive) conclusion, false. But in the case of a valid deductive inference it is impossible that the premises are true and the conclusion is false. To say that PA, or *anumāna*, is both deductive and inductive would amount to saying that it is both impossible and possible that the conclusion of a valid PA, or *anumāna*, is false while its premises are true. This is a good *reductio ad absurdum* proof that PA or *anumāna* cannot be claimed as both deductive and inductive.

It is also not possible that PA is neither deductive nor inductive, that the distinction between deduction and induction does not apply to it. It has been shown earlier that both SA and PA are formal, deductive, inferences. Moreover, any rigorous or strict inference has to be of one or the other variety. It either has to entail or guarantee, the truth of its conclusion or show that it has a high probability of being true. It cannot be a rigorous or strict inference if it does neither, that is, if it is neither deductive nor inductive. There are informal, non-rigorous, inferences in which the premises neither entail their conclusion, nor show the reasonable probability of the truth of a generalization, but imply something in a slightly loose sense of the term. We say that they do not prove its truth, but only show that it is reasonable to accept it as true or odd to reject it as false, while accepting the premises. For such informal, sometimes called pragmatic,[1] inferences, neither 'deductive', nor 'inductive', would be a fit title. But *anumāna*, as SA or PA, does not belong to this class of inferences. It is inference in the strict sense of the term and therefore it has to be deductive or inductive. It would be wrong to hold that it is both deductive

[1]See my *Regularity, Normativity and Rules of Language* (Poona University), Chapter 2 for a discussion of pragmatic implication and inference.

and inductive, and not deductive only, or inductive only. But some very eminent scholars have held that it is both. Therefore it is worth examining in some detail the ground or grounds on which they have held this view.

2. PA as both Deductive and Inductive: The Received View Stated and Rejected

A view of PA as being both deductive and inductive seems to owe its origin to a passage in B.N. Seal's *The Positive Sciences of the Ancient Hindus*. It has been referred to, quoted, and supported by S. Radharkrishnan, D.M. Datta, S.C. Chatterjee, and many others who have written on the Indian conception of inference (*anumāna*). According to Seal:

> *Anumāna* (Inference) is the process of ascertaining, not by perception or direct observation, but through the instrumentality or medium of a mark, that a thing possesses a certain character. Inference is therefore based on the establishment of an invariable concomitance (*Vyāpti*) between the mark and the character inferred. The Hindu Inference (*Anumāna*) is therefore neither merely formal nor merely material, but a combined Formal-Material Deductive-Inductive process. It is neither the Aristotelian Syllogism (Formal-Deductive process) nor Mill's Induction (Material-Inductive process), but the real Inference which must combine formal validity with material truth, inductive generalisation with deductive particularisation.
>
> An inference admits of a deductive particularisation—in the shape of five propositions for dialectical purposes (i.e. in demonstrating to others)—or of three propositions when the inference is for oneself (*svārthānumāna*.) ...[2]

S.C. Chatterjee almost reproduces Seal when he says that:

> In Indian Logic an inference is a combined deductive-inductive reasoning consisting of at least three categorical propositions. All inferences are thus pure syllogisms of the categorical type which are at once formally and materially valid. Hence we have not a classification of inferences into deductive and inductive, immediate and mediate, syllogistic and non-syllogistic, pure and mixed.[3]

Radhakrishnan speaks in the same vein when he says that 'The mention of the example indicates that inference is both inductive and deductive. The generalisation is based on truths'.[4] He too follows Seal's

[2]B.N. Seal (1915), p. 251.

First published by Longmans, London, in 1915 and reprinted by Motilal Banarsidas in 1985.

[3]S.C. Chatterjee, *The Nyaya Theory of Knowledge* (Calcutta University, 1932), p. 265.

[4]S. Radhakrishnan, *Indian Philosophy*, Vol. II (1932), pp. 77–80.

line of thinking because his ground for calling inference both deductive and inductive is the same as Seal's, namely, the fact that every inference has a *vyāpti*, with an example as an adjunct of it. Sometimes the *vyāpti* is even called example (*udāharaṇa*). Datta refers to both Seal and Radhakrishnan, expresses his full agreement with their reasoning and holds the same position which they hold in this regard.

According to the *Nyāya* school, a fully-stated PA has five constituents, as illustrated below:

1. That mountain has fire (*Pratijñā*: The proposition to be proved).
2. It has smoke (*Hetu*: the reason).
3. Whatever has smoke has fire, as has a kitchen (*Udāharaṇa* or *Vyāpti*: Universal concomitance between the reason and the thing to be inferred to be true of the mountain, along with an example).
4. That mountain too has smoke (*Upanaya*: affirmation of the presence of the same reason in the mountain).
5. Therefore, that mountain has fire (*Nigamana*: conclusion now proved).

Among the remaining schools of classical Indian philosophy, some hold that only the first three are necessary, while some others that only the last three. This means that all the schools which admit inference to be a means or form, of knowledge admit *vyāpti* to be a necessary constituent of it. 'Whether we take', Datta points out, 'the first three steps or the last three, the *udāharaṇa* (*vyāpti* with an example, the step 3 in the illustration given above), that is common to both, is preserved'. This fact of the history of classical Indian philosophy shows, according to him, that

> the *udāharaṇa* (*vyāpti* with the example) is the characteristic keystone of the Indian syllogism ... it (the *udāharaṇa*) consists of the universal proposition supported by concrete examples. ... The *upāharaṇa* makes difficult any attempt to affiliate the Indian syllogism to that of Aristotle ....

He reaffirms Seal's characterization of inference—as a 'formal–material deductive–inductive process of reasoning'.[5]

Since Seal is the originator of this mode of characterizing the Indian conception of inference, having five, or even three, propositions as its constituents, let us call it the Seal thesis. Neither Seal, nor any one of the others who follow him, care to state in clear terms when an inference is only deductive, or only inductive. Nor does any one of them define the

[5]D.M. Datta, ibid,. pp. 218–19.

notion of material validity. As far as formal validity is concerned, they are not more candid, but we can assume that they mean by it what Aristotle, or other Western logicians, mean by it; that is, an inference or argument is formally valid if its validity is guaranteed by its form. This simply means that any inference which is in this form, or is expressible in this form with the use of some logically sound transformation rule or rules is valid. This is so because it is not possible for an inference in this form that its premises are true and its conclusion is false. We say the same thing when we say that its premises entail its conclusion. We can also assume that by the material validity of an inference they mean that not only its conclusion follows from its premises but all constituents of it, that is, all of its premises and conclusion, are true. This means that a materially valid inference has to be: (a) formally valid, and (b) has to have only true propositions as its constituents. Only this notion of material validity is viable, and not the other one which only requires (b), namely, that all of its constituents must be true.

An inference, all the premises and conclusion of which are true, but its premises do not entail its conclusion, that is, one which is not formally valid is of no logical value because it neither proves nor disproves anything. For example, all the constituents of the inference,

$2 + 2 = 4$
A calendar year consists of 365 days
Therefore, Dharmakīrti is a Buddhist,

are true propositions but the inference is formally not valid because its premises do not entail its conclusion. All of its constituents are independent of each other, and therefore its premises neither prove, nor disprove, its conclusion. One can even say that it is not an example of inference, as well as that it is formally invalid because it is possible to assign the truth-value 'true' to all of its premises and the truth-value 'false' to its conclusion. In other words, that its premises do not entail its conclusion, that its conclusion does not follow from its premises, as well as that its form does not guarantee its validity. Therefore it is not sufficient that the premises of an inference are true to enable it to yield a true conclusion, since it is also necessary that it is formally valid. The true premises only of a formally-valid inference can justifiably yield a true conclusion because they entail their conclusion. Therefore, the notion of formal validity is not a dispensable notion if one wants to call only those inferences proper inferences in which true premises yield true conclusions. It is true that an inference may be formally valid even

if one or more than one of its constituent propositions is false; but it cannot be valid if all of its premises are true and its conclusion is false.

According to the Seal thesis, inference, as conceived by classical Indian logicians, Buddhist and non-Buddhist, is both formally and materially valid. Therefore, since it is formally valid, its premises entail its conclusion, and since it is materially valid too, all of its constituents are true. We can state the same thing more concisely by saying that according to the Indian theory of inference, an example of reasoning can properly be called inference, or genuine inference, only if all of its constituents functioning as premises are true and their conjunction entails the constituent functioning as, or claimed to be, its conclusion. We do not have to add that its conclusion must also be true because the conjunction of true premises can entail only a true conclusion.

There is a point then in Seal's highlighting that the very concept of inference as used in Indian logic by definition makes it both formally and materially valid. I have referred to this feature of the Indian theory of inference in the context of DK's characterization of the three-featured *hetu* (Chapter 4.2). I have maintained there that, since the concept of a *hetu* is the concept of a premise, to define the *hetu* as necessarily having the three features, that is, as being necessarily present in the locus, present only in the similar to the locus and never present in the dissimilar to the locus, is in effect to lay down, what may be called a normative logical, or an ethical rule, that only a true proposition can be used as a premise, or as a conjunct of a premise and it must be in a particular form. It is this rule or requirement, no matter whether you call it logical or ethical, which makes any inference properly so called, both formally and materially valid, as Seal puts it.

Even an Aristotelian syllogism may be both formally and materially valid, and many syllogistic inferences are. But since Aristotle is concerned only with stating the conditions of formal validity or the formal conditions of validity, he does not define a syllogism in such a way that one with some false premise or premises would not be a syllogism even if its premises entail its conclusion. But it does not mean that he does not consider it wrong in any way to use a false proposition as a premise. And, even his syllogisms ensure that true premises cannot entail a false conclusion. A set of false premises can entail, a modern logician would say, a true conclusion because it can entail a true as well as a false conclusion. Therefore, that a set of false premises can entail a true conclusion, cannot be taken as a licence to use a set of false premises to prove a true conclusion because a set of false premises can be used to entail anything, for example, to entail the proposition 'Q' as well as its

contradictory '$\sim Q$'. Only a set of true premises can be used to entail a conclusion which would surely be true, and can never be used to yield a false conclusion.

In Seal's way of distinguishing between a PA and an Aristotelian syllogism, one may perceive the basis for asserting the superiority of the former over the latter. The former is superior, he may say, to the latter because a valid PA has to have only true propositions as its premises whereas one or both of the premises of a valid syllogism may be false. It is true that in some syllogistic moods of Aristotle, a true conclusion can be validly drawn even when one or both of their premises are false. But this does not mean that Aristotle's syllogistic does not disallow the use of a false proposition as a premise. Aristotle does not use any example of a valid syllogism with a false premise to illustrate syllogistic inference. Rather, he tries to prove that the use of a false proposition as a premise to yield a true conclusion would result in some sort of an absurdity. Some interpreters of Aristotle think that by absurdity here he means self-contradiction. It is also true that he fails to prove this result. But his keenness to prove it shows that he is against permitting the use of a false proposition as a premise in a syllogism. He does not expressly make it a rule of syllogistic inference that a false proposition cannot be used as a premise because in his theory of syllogism he is concerned, as already said, only with laying down the general formal conditions necessary for a true proposition to be entailed by a set of two other propositions.

Even though Aristotle's proof fails, it is worthwhile to know what it is and how it fails. I shall elaborate on it very briefly as follows.

Suppose P, the set of premises of a valid syllogism, is true and entails Q, the syllogism's conclusion, which also is true. We can then say,

(1) $P \supset Q$,

from which by contraposition we get,

(2) $\sim Q \supset \sim P$.

If we assume that a false set of propositions can also be used to entail a true conclusion, we can use $\sim P$ to entail Q. Since P has been assumed to be true, $\sim P$ would obviously be false. We can then have,

(3) $\sim P \supset Q$.

The conclusion of a syllogism is entailed by the set or conjunction of its two premises, and not singly by any one of them. The set or conjunction

would be true if both the premises are true, and false if one or both of them are false. To assume P to be true is to assume that both of the concerned premises are true because P is the set or conjunction of these, and to assume ~P is to assume that at least one of them is false. We now have:

(1) $P \supset Q$
(2) $\sim Q \supset \sim P$
(3) $\sim P \supset Q$.

Using the rule of hypothetical syllogism on (2) and (3) we get,

(4) $\sim Q \supset Q$.

Aristotle considers $\sim Q \supset Q$, the result of using a false set of premises to yield a true conclusion, to be absurd or self-contradictory, and therefore claims that he has given a *reductio ad absurdum* proof to the effect that a false set of propositions cannot be used as the premise-set of a syllogism to yield a true conclusion. But $\sim Q \supset Q$ is not self-contradictory because it is equivalent to Q and Q is not self-contradictory. This can be shown as follows:

(4)	$\sim Q \supset Q$	
(5)	$\sim\sim Q \vee Q$	4, Impl.
(6)	$Q \vee Q$	5, D.N.
(7)	Q	6, Tautology

Had Aristotle drawn Q. ~Q in place of $\sim Q \supset Q$, he would have given a *reductio* but Q. ~Q cannot be drawn from (1), (2) and (3). But even though his proof fails to prove his point, it clearly shows his intention to forbid the use of a false proposition as a premise in a syllogism to yield a true conclusion.[6]

An Aristotelian, or a modern Western, logician would call an argument valid, or formally valid when its conclusion logically follows from its premises, no matter whether all of its premises are true or not, and he would call it a good, or sound argument if it is formally valid and all of its constituent propositions are true. Only arguments of this type, Seal avers, are genuine, or permissible arguments according to Indian logic, and calls them both formally and materially valid. The difference between

[6]For a detailed discussion of this issue, see G. Patzig, 'Aristotle and Syllogisms from False Premises', *Mind*, Vol. 68, 1959, pp. 186–92. (The account given here is a simplified and slightly altered one—Author.)

the Aristotelian and Indian theories of inference, as far as the identity of a *bona fide* inference is concerned, is, thus, largely a difference in characterization or designation. The former would call, using Seal's terminology, any inference *bona fide* if it is formally valid, while the latter would do that only if it is both formally and materially valid. The former does not deny the importance of material validity, nor can the latter deny that of formal validity.

The difference between the two is like the difference between two ways of defining a fruit, say, an apple. One of them defines it in terms of certain botanical properties which allow any fruit having those properties to be called an apple, no matter whether or not it is sweet, while the other one defines it in such a way which allows only a sweet apple to be called an apple. It would be as wrong to say of the former that for it the sweetness of an apple does not matter as it is to say of the latter that for it the botanical properties of the fruit do not matter. The former cannot ignore the market value which a sweet apple really has, nor can the latter the classificatory value its botanical properties have (because without them it cannot be classified as an apple).

Coming back to the Seal thesis, any specimen of the Hindu, that is Indian inference, the five-membered one of the *Nyāya*, the three-membered one of some others or the one single conjunctive statement of the three-featured logical reason of DK, characterized as formally–materially valid, as the thesis does, would remain a deductive form of inference. It would for the simple reason that, in whichever of the three forms mentioned above it is presented, the set of its premises entails its conclusion. That the set of its premises entails its conclusion neither Seal nor any one of those who follow him would deny. But, they would still say that it is both deductive and inductive. The only reason which Seal and others offer for calling it inductive, as clear from the quotations earlier is that it contains, as one of its premises, a *vyāpti*, a universal proposition appended with an example. But the mere occurrence of a universal proposition as a premise in an inference cannot make that inference inductive. If it can, then all of Aristotle's syllogisms would be inductive because every valid syllogism, according to him, must have at least one universal proposition among its premises. Nor can the mere occurrence of a universal proposition as its conclusion make it inductive because many of his valid syllogistic forms have as their conclusion a universal proposition.

There is certainly a difference between a universal proposition occurring as a premise in an Aristotelian syllogism and the *vyāpti* of PA. The former does not have to be true and is not appended with an example. But a *vyāpti* occurring in SA or PA has to be true and it is appended with an

example to indicate that it is true, that it has its instantiation, or that it has been established on the basis of true instances of concomitance between the *hetu* and the *sādhya*, and between the absence of the *sādhya* and that of the *hetu*. But the universal premise of a syllogism may also be true. Rather, in the use of a syllogism in a real situation it must be true. If it is not, it would not achieve its purpose which may be to prove, or to disprove, the truth of a proposition. It would not, because the person to whom it is offered would not agree to the use of a false proposition as a premise if he knows that it is false, and if he does not know that it is false at that time but comes to know of its falsity later, he would accuse the giver of the syllogism of having cheated him. But even if all this does not happen, the mere occurrence of a universal premise in an inference, the mere truth of the *vyāpti* of PA, or SA, would not make it inductive.

But may not the appended example of a *vyāpti* make the inference in which it occurs inductive? Certainly not. If Aristotle is reborn as an Indian and reformulates his theory of syllogism, requiring that the universal proposition occurring in a syllogism must be appended with an appropriate example, he could retain the deductive character of the syllogism in its present form which would not make it inductive in any way. An inference is inductive if in it a universal or general proposition is inferred, or established from a certain number of concrete, real instances of a certain type. For example, if on finding several instances in which when smoke is present fire too is present, and no instance of smoke without fire, we infer that wherever there is smoke there is fire, we would be making an induction or an inductive inference. But in this inference, a *vyāpti* is proven or inferred inductively, and not deductively; in it, the *vyāpti* 'Wherever there is smoke, there is fire' is the conclusion, and not a premise, of the inductive inference. In SA or PA, a *vyāpti* appended with an example is used as a premise and not itself inferred as a conclusion, and therefore neither SA nor PA is inductive in spite of its *vyāpti* having been appended with an example. The example is given only to show that the *vyāpti* is an already proven proposition, that it is not false, vacuous, or tautologous. Neither the example given, nor anything else in any SA or PA, prove or establish the *vyāpti*, as has been shown while discussing the role of *dṛṣṭānta* according to DK in Chapter 11. A *vyāpti*, being a premise in SA or PA, cannot be proven in or by the same SA or PA. The same proposition cannot be both a premise and a conclusion in the same token of inference. Therefore, SA or PA cannot be called on the ground that it has a *vyāpti* with an example, inductive and therefore not both deductive and inductive, as Seal and others do.

The requirement that a *vyāpti* must be appended with an example

might have been made to serve a practical purpose, to dissuade the demonstrator of a PA from giving a false *vyāpti* because he would find it extremely hard to give a well-established example or instantiation of it. We have seen that DU has made it very clear that an example must be an instantiation of the *vyāpti* arrived at by the use of a valid means of cognition (*pramāṇa*). A reasoner cannot provide such an example of a false *vyāpti* because there cannot be any, and therefore may be wary of using a false *vyāpti*. It is a good practical device deserving to be built into the theory of inference. But it would only mean that the *vyāpti* itself must be a well-grounded inductive proposition. It has nothing to do with making inductive the PA in which it is used as a premise.

Further, if we concede that the occurrence or use in PA of an inductive proposition, a *vyāpti* with an example makes the PA inductive, we would have no reason for not conceding that the occurrence or use in it of a perceptual proposition makes it a case of perception. If the PA:

(1) That mountain has smoke,
and
(2) Whatever has smoke, has fire, for example, a kitchen,

is inductive because of the occurrence of (2), an inductive proposition, in it, it should be held true by the same logic, that it is a case of perception because of the occurrence of (1), a perceptual proposition, in it. This would be a good *reductio ad absurdum* proof that we cannot call an inference inductive because of one of its premises having been inductively arrived at. A piece of reasoning would become inductive if it consists in arriving at, in inferring, a generalization, an inductive proposition, from a set of instances, and not simply because it uses an inductive generalization as a premise. In the above argument, and in every PA, an inductive proposition, a *vyāpti*, is only used as a premise, and not arrived at as a generalization.

A cognitive exercise, DK says, and other Indian logicians too would concur with him, is a specimen of PA (or even SA) because of the fact that the object cognized by means of it is mediately or indirectly, cognized (*parokṣa artha*) through the mediation or instrumentation of the three-featured logical reason (*hetu*). The different types of inferences, AHI, SHI, and KHI, are therefore, called different by DK on the basis of the different types of *hetus* figuring in them, and not on the basis of the source of cognition, perception or inference, deduction or induction, by means of which any premise of it has been arrived at. This means that DK, and even others, are not oblivious of the fact that it is not the method of cognition by which any premise of an inference has been obtained

which makes it an inference or a particular type of inference. That the example of inference given above and its ilk are deductive is explicitly admitted by DK when he says that PA is nothing but the HV, the assertion or statement, of the three-featured logical reason, and that it is not necessary to state the conclusion because the HV entails it. If PA is inductive, its conclusion cannot be left unmentioned because then it would not be entailed by the instances from which it would be a generalization, or an induction. For DK, to tell anyone the HV of PA is also to tell him by implication its conclusion. This can be said only if PA is deductive and not if it is inductive since the premises, the data of an inductive reasoning do not entail their conclusion. All this can be said to be true not only of DK's conception of PA but even that of others like the *Naiyāyikas* and *Advaitins* whom Seal and Datta[7] have in mind when they say that the distinction between deduction and induction does not apply to the Indian conception of inference.

In any PA the conclusion follows from the conjunction of all of its premises, and not from any one of them. And, whether we take PA to be the statement of the three-featured logical reason, as DK does, or as consisting of four premises, *pratijñā, hetu, udāharaṇa*, and *upanaya* or of only two *udāharaṇa* and *upanaya*, the conjunction of its premises would entail its conclusion and thereby would make it a clear example of formal deductive inference. Therefore, it would not be correct at all to say that the distinction between deduction and induction does not apply to the Indian account of inference. That is, it is correct neither to say that PA is both deductive and inductive, nor to say that it is neither, for the simple reason that it is obviously deductive. Datta[8] says that it cannot be deductive because it contains an example. It is true that normally a deductive inference does not contain an example. But if an example is added to a premise of it which is a universal proposition, it would not destroy its deductive character. It would only show that the universal proposition which the example exemplifies has an instantiation.

An inference is deductive because its premises entail its conclusion. Examples are redundant in a deductive inference but if they occur, they would not destroy its deductive character. As already referred to, Kneale tries to defend Aristotle's inference of an existential (particular) proposition from two universal propositions, for example, in Darapti by interpreting Aristotle as assuming that a universal proposition has an instantiation. This interpretation amounts to saying that in an Aristotelian syllogism,

[7]Ibid.
[8]Ibid.

an A proposition can be appended with an example without making the syllogism inductive, or without requiring it to cease to be deductive.

In no inductive inference, the use of anything like a three-featured logical reason is required as it is in inference (*anumāna*), SA or PA. This is true not only of DK's logic, but even of others'.[9] That is why we do not need any HV like DK's, or any five- or three-membered inference pattern, to arrive at an inductive generalization. To say all this is not to even remotely suggest that Indian logicians have no theory of induction, but only to point out that PA is in no way an inductive inference. By calling PA deductive, or, non-inductive, we in no way underrate its logical value, or the creativity of the philosophers who have formulated the theory of PA (or SA). Rather, we would be attributing to them a gross logical oversight by interpreting them as having meant by PA a kind of inference which is both inductive and deductive, or even one which is neither inductive nor deductive.

The methods of establishing *vyāpti*, at least some of them, are inductive, but they are not SA or PA. SA and PA are *vyāpti*-using, *vyāpti*-based, and not *vyāpti*-establishing inferences. The irony is that when Seal, and those who follow him, call Indian inference both deductive and inductive, they clearly mean SA or PA, and not the ways or methods of establishing a *vyāpti*. Moreover, the latter methods are inductive, not deductive, and therefore not both inductive and deductive. Scientific method everywhere, in the East as well as in the West, is both deductive and inductive. The scientist makes an induction, deduces a conclusion from it, tests its truth, and finding it to be false, modifies his generalization or induction, etc. But this does not mean that the same act of inference is ever both deductive and inductive.

It seems to me that Seal wanted to show, and rightly, that the Hindu scientific method was both deductive and inductive. By showing this he would not have shown the difference between the Western and Indian conceptions of inference. To do the latter he tried to show that one and the same token of inference, a PA, was both deductive and inductive because it had a *vyāpti* with an example as a necessary constituent and on that account was different from Aristotelian syllogism or theory of inference which is only deductive. But following this lead, for locating the difference between the Indian PA and Aristotelian syllogism turned out to be a red herring for those who were led by it.

There is a difference between the two, both in form and objective,

[9]Kesava Misra, *Tarkabhāsā* (1976), Hindi translation by Badari Nath Shukla, pp. 105–6.

but it is a different kind of difference from the one which Seal and others, who follow him, claim it to be. To repeat what has already been said, the formal difference between the two is that in PA, one premise must be a universal proposition, the other a singular existential proposition, and the conclusion a singular existential proposition. No particular proposition is allowed to occur as a premise, or as a conclusion. In the Aristotelian syllogistic one premise must be universal and the other universal or particular, and the conclusion universal or particular. No special importance is given in it to the singular existential proposition. Because of its permitting only one form, the Indian theory rightly dispenses with the problem of figures and moods of inferences about which Aristotle bothered so much unnecessarily.

The difference in the objectives of the two is that the Indian theory wants to permit only the inference of a true proposition from a set of some other true propositions and therefore defines its concept of a premise which its concept of *hetu* really is, in such a restrictive way that a false proposition cannot be a premise or the conclusion of a valid PA. Aristotle's objective is not so restrictive. If a syllogism's conclusion follows from its premises without violating any syllogistic rule, it is a permissible inference no matter even if all of its premises are false. He is interested in the broader problem of determining the conditions of the formal validity of inferences, and not in determining only the conditions which guarantee the valid inference of a true conclusion from true premises. The reason for his theory of syllogism not being as restrictive as the Indian theory of SA or PA is that his theory of deduction is not hooked so closely to epistemology as is the Indian theory. For the latter, inference as such is a *pramāṇa*, a means to right knowledge, or a form of right knowledge. Therefore, any inference, deductive or inductive must be, or yield some genuine knowledge. For an Aristotelian syllogism, this claim cannot be made so confidently.

FOURTEEN

Impermissible Inferences

1. Inferring and Misinferring

Inferring is an intentional action. Its intentionality is more obvious in the exercise of PA rather than that of SA. To grant to it the status of an intentional action is to admit that it can be done rightly or wrongly, that the inferer, its doer, can be blamed for having done it wrongly, or praised for having done it rightly, that a particular case of inferring may be a case of misinferring, etc.

A legitimate exercise of offering a PA to someone, according to DK, consists in presenting to him the complete statement of the relevant logical reason, the HV, to prove to him the truth of a certain proposition. The HV is claimed to prove the latter by entailing it. That it entails the latter is so obvious, or clearly visible, that it is unnecessary to state the proposition proved to be true by the HV. Therefore, the HV includes only a mention of the three features of the logical reason and not of the proposition, that is, the conclusion, to prove which the HV is stated. It is fair to use only a true HV to prove another true proposition. This requirement of logical fair play, as has been shown, DK builds into his theory of inference by defining the HV in such a way that a false HV becomes impermissible. Therefore, one way in which an inference can go wrong, that is, can be a misinference is to have a false HV. The HV is, we have seen, a conjunction consisting of three conjuncts. Therefore, it can be false when any one of its three conjuncts is false. But an inference can also go wrong when it is impermissible to try to prove true the proposition which it is intended

to prove true. That is, according to DK, only a true HV is to be used in a PA but it is to be used to prove the truth of only a true proposition. To violate any one of these two conditions is to adopt an impermissible procedure and thereby to make the inference concerned a misinference, a deficient or fallacious inference.

An intentional action may be performed with any sort of motive, good, bad, or indifferent. This may be the case with an act of inferring as well. One may do the jugglery of using a false HV, or of using an HV to prove true a false proposition. That one should not do anyone of these two things can be said to be a moral requirement, and therefore a requirement which any user of PA ought not to infringe upon. DK would accept all this, as any logician would. But DK does not want to stop there. He incorporates both the requirements into his logical theory as its constituents, or building blocks. Every inference, according to him, must have a true HV and also a true conclusion and one which faults on any of these two counts would be a misinference or a wrong inference, that is, it would involve not only moral unfairness but also logical unfairness. I shall first state the conditions or factors which, according to him, make a conclusion a misconclusion (*pakṣābhāsa*), that is, a proposition impermissible to be proven as the conclusion of any PA, and then the conditions which make an HV, or a *hetu*, an impermissible HV or *hetu*.

2. Conditions which make a Conclusion Impermissible

The conclusion of a PA is the proposition which its demonstrator *intends* to prove true to the demonstratee in virtue of its being entailed by the HV of his PA. It does not matter whether he does, or does not, explicitly *say* what it is, or whether he does, or does not, say that he wants to prove it. What is important is that he intends to prove it.[1] But there are certain conditions which it must fulfil, or restrictions upon which it must not infringe, otherwise it would not be permissible to make it the objective or the conclusion of any PA. The objective of any PA is to prove the truth of a proposition by showing that it is the conclusion of that PA. If the PA is otherwise error-free, it would prove that proposition to be true since it is entailed by the HV of the PA. But proving the truth of every sort of proposition cannot fittingly be the objective of a PA; that is, every sort of proposition is not permitted to figure as the conclusion of a PA. It is impermissible for any person to aim at proving the truth of a proposition as the conclusion of a PA if that proposition has already been proven false by: (a) perception, or (b) inference, or (c) semantics of the language

[1]SNS, NB, pp. 236.37–239.40.

it belongs to, or (d) the self-contradiction inherent in the verbal or linguistic form used to express it.[2]

An example of a proposition proven false by perception would be 'Sound is not an object of auditory perception'. That of a proposition proven false by inference would be 'Sound is eternal'. Here DK is assuming the validity of the inferential reasoning given by Buddhist philosophers to prove the non-eternality or momentariness, of sound. Even if this example is not accepted, the point which he makes through it is valid because it is not proper to try to prove true a proposition as the conclusion of a PA if the latter has already been proven false by a prior, valid inference. For instance, it would be impermissible to try to prove in plane geometry that the sum of the square on the base and of that on the perpendicular of a right-angled triangle is greater than the square on its hypotenuse since it has already been deductively proven that the former is equal to, that is, not greater than the latter.

An example of a proposition semantically proven false, using an English sentence governed by the semantics of English language, would be 'A bachelor is not an unmarried male adult'. The semantics of English makes it false because the word 'bachelor' is used in English to refer to the same individual the phrase 'unmarried male adult' is used to refer to. DK offers a Sanskrit sentence to make the same point. The two words '*Śaśi*' and '*Candra*' refer to the same thing, the moon. Therefore, the proposition expressed by the sentence '*Śaśi* is not *Candra*', that is, '*Śaśi*' does not refer to the thing '*Candra*' refers to, is rendered false by the semantics of Sanskrit language. As an example of a proposition rendered false by the inherent self-contradiction in its verbal structure, DK offers 'Inference is not a *pramāṇa* (means of valid cognition, or simply, valid cognition).'[3]

The sentence 'Inference is not a *pramāṇa*' does not bear its self-contradiction on its face. Therefore, it needs to be shown that it does. Śāntabhadra, Vinītadeva, and some others try to show it in one way while DU in another very complicated way rejects the way they do. I shall first present their analysis and reject it on a ground not very different from the one on which DU rejects it. I shall then give DU's analysis in a simplified form by freeing it from some of its unnecessary technicalities. But I shall reject it too because it is grounded in the Buddhist theory that knowledge that is yielded by verbal testimony (*śabdajñāna*) is really or is reducible to inferential knowledge. Therefore, it may not be accepted by one who does not accept the Buddhist denial of verbal testimony as

[2]Ibid., p. 247.48.
[3]Ibid., pp. 247.48–252.52.

an independent *pramāṇa*. Lastly, I shall show, in my own way, without contravening any of the principles of DK's theory of inference, how the sentence 'Inference is not a *pramāṇa*' is vitiated with a concealed self-contradiction. I shall do that in a purely logical way without assuming any particular epistemology or metaphysics, Buddhist or non-Buddhist.

Śāntabhadra, Vinītadeva[4] and some others say that whenever a person asserts a proposition, his *intention* is to communicate to the addressee, the truth or right knowledge conveyed by the proposition about an actual state of affairs. His intention to communicate the truth is the cause, and his utterance of the sentence, the verbal form, expressing the proposition, the effect of his intention. Therefore, when one utters the sentence 'Inference is not a *pramāṇa*', the hearer infers from the effect, the utterance of the sentence, its cause, the *speaker's intention* to tell him (what he considers to be) the truth that inference is not a *pramāṇa*. This the hearer does as is done in any KHI, any inference in which the cause is inferred from the effect. But by inferring the cause, the intention of the speaker, the hearer comes to know a truth, namely, the *truth* that the speaker *intends* to communicate to him that inference is not a *pramāṇa*. This means that the hearer's inference has given him the knowledge of this truth about the speaker's intention and thereby has shown that it, that is, the inference, is a *pramāṇa*. The speaker's assertion that inference is not a *pramāṇa* to an addressee, thus, yields to the latter the truth that inference is a *pramāṇa*, and therefore contradicts itself.

DU's objection to this interpretation of the element of self-contradiction, present in the sentence 'Inference is not a *pramāṇa*,' is that a sentence is uttered to a hearer so as to enable him to know an actual state of affairs in the outside world, to know something concerning the object the sentence is about, and not simply to enable him to infer or to know the intention of the speaker in uttering it. DU is right in saying this. Therefore, it is a serious objection to the interpretation in question, in spite of the fact that in a very simple, elegant way it brings to the surface the self-contradictoriness of the sentence 'Inference is not a *pramāṇa*'.

Buddhist philosophers do not accept verbal testimony (*śabda*) as a *pramāṇa*. A piece of knowledge, which some other Indian philosophers, for example, a *Naiyāyika*, would call knowledge yielded by verbal testimony, they would call inferential if they accepted it to be a piece of knowledge and found that it could not be explained as perceptual. This is so because as DK has very candidly said, according to Buddhism, there are two and only two *pramāṇa*s, perception and inference.

To assert a proposition is to assert that something is or is not such

[4]SNS, NBT, p. 255.

and such, or that something is or is not a fact. When one asserts that p to someone, normally he believes or accepts that 'p' is true, and intends to convey his belief in or acceptance of its truth. This is involved in the very logic of asserting that p, or even in that of uttering the sentence 'p' in the context of a cognitive discourse. And, demonstrating a PA, that is, proving the truth of a proposition as its conclusion is definitely an exercise in cognitive, ratiocinative discourse.

Admitting this general, common sense logic of asserting a proposition, DU says that when one asserts a proposition, he asserts it only to show to the addressee that the actual state of affairs in the external world is as it has been coveyed to be by the proposition, that is, to generate in him the right knowledge that something, in the outside world is or is not such and such. There is no point in saying something to show to the addressee that what has been said is false. Therefore, he goes on, we can say that there is an invariable concomitance between what we say, or verbally assert, and the actual state of affairs (*vāhyārtha*), between the language we use to talk about the world and the world. This invariable concomitance according to him, can be stated as 'Whenever one asserts that something is (or is not) such and such then that something is (or is not) such and such'. Therefore, when one says that inference is not a *pramāṇa*, the hearer may proceed, to reason as follows:

> Whenever one asserts that inference is not a *pramāṇa*, inference is not a *pramāṇa*, and this speaker asserts that inference is not a *pramāṇa*.

The above reasoning is a valid inference yielding the conclusion that inference is not a *pramāṇa*. Since the above HV is true, and entails the conclusion, the conclusion is true. Therefore, this is a case of an inference yielding a true conclusion, a piece of right knowledge, and consequently a case which shows that inference is a *pramāṇa*. But the right knowledge which it yields is that inference is not a *pramāṇa*. This means that inference, which is a *pramāṇa*, entails that inference, that is, it itself, is not a *pramāṇa*.

When we closely look into what we have done here, we find that the above inference is valid, or a *pramāṇa* because its HV is true, entails its conclusion and the conclusion is (as claimed by the inferer) true. Therefore, 'Inference is not a *pramāṇa*' is a proposition proving which to be true, as has been shown here, proves that inference is a *pramāṇa*. To prove it true is thus, to prove it false. This means that it is self-destructive or in logical terminology, self-contradictory.[5]

This analysis of DU would not be acceptable to a non-Buddhist

[5]Ibid., pp. 252–56.

who admits that a verbal utterance can directly transmit or convey a piece of knowledge, that is, to him who accepts verbal testimony as an independent *pramāṇa*, not reducible to inference. A *Naiyāyika*, for example, may agree with DK and DU in their saying that proving by inference the untenability of inference as a *pramāṇa* is self-contradictory. But he may not accept the particular example of inference which DU has mentioned as one claiming to prove that inference is not a *pramāṇa* and his way to show that self-contradiction results therefrom. Secondly, the logic of making an assertion is clear on the point that the *vyāpti*, 'Whenever one asserts that x is y, x is y', is not true. Therefore, one can say that the *vyāpti*, 'Whenever one asserts that inference is not a *pramāṇa*, inference is not a *pramana*' being an application of it, is not true. That is, he may reject the invariable concomitance between our *saying* what things are and things' *being* what they are. He may say that when anyone asserts that something is such and such, his assertion implies that he *believes*, accepts, or intends to convey, that it is true that something is such and such; it does not *imply* that it is *true* that something is such and such. Therefore, the logic of our normal practice of making an assertion can be taken to suggest only the *vyāpti* 'Whenever one asserts that something is such and such, he believes (accepts, intends to convey, etc.) that it is true that something is such and such', which is very different from 'Whenever one asserts that something is such and such, it is true that something is such and such'. DU wrongly takes the logic of assertion to suggest the latter, when it only suggests the former.

If we take this position then when someone says 'Inference is not a *pramāṇa*' his hearer may proceed to reason as follows:

> Whenever one asserts that inference is not a *pramāṇa*, he believes that inference is not a *pramāṇa* and this speaker asserts that inference is not a *pramāṇa*.

This inference is also valid like the one given earlier but its conclusion is 'This speaker believes that inference is not a *pramāṇa*', and not 'Inference is not a *pramāṇa*'. But its conclusion, 'This speaker believes that inference is not a *pramāṇa*' is also true because it has been entailed by a true HV. Therefore, here also it is shown that inference is a *pramāṇa* because it is shown that it has yielded a truth. Therefore, it has been, in a way, shown that 'Inference is not a *pramāṇa*' is not self-coherent. But that has been done not by analysing the verbal structure of 'Inference is not a *pramāṇa*' but by analysing the logic of asserting it, or rather the logic of asserting anything. This analysis is more faithful to the logic of assertion than DU's, though it is in conformity with his substantive claim that 'Inference is

not a *pramāṇa*' is not a self-coherent, or logically impeccable, proposition.

An objection may be raised even to the above way, a way different from DU's of showing the self-incoherence of 'Inference is not a *pramāṇa*' by pointing to the fact of the use of language in lying. It may be said that the liar knows that 'p' is true but asserts 'not-p', though believing that 'not-p' is false and intending to convey to the hearer that 'not-p' is true. The logic of making an assertion, assumed by DU, or in the discussion here, it may said, is not all true, or not all that simple, and therefore it cannot be used to show the self-contradictory character of 'Inference is not a *pramāṇa*', as has been done here, or by DU.

This is not the place to discuss the logic of lying. I would only point out that DK and DU are interested in showing the self-contradictoriness of 'Inference is not a *pramāṇa*' only to illustrate that such a sentence is disqualified to become the conclusion of an inference. It is in the context of offering, or demonstrating, and of understanding or accepting an inference that DU has used the logic of assertion to show the self-contradiction concealed in 'Inference is not a *pramāṇa*'. This context is the context of asserting in the normal way, that is, the context of asserting which implies the belief that what is asserted is true. That is why his not taking into account the problem posed by lying does not mean any logical lapse made by him. Moreover, the fact of lying confirms, and does not disprove, the logic of assertion used by DU. The liar too accepts that asserting that p implies believing that p. Rather, lying assumes this logic of assertion. Unless it is assumed by the liar that he who asserts that p believes that p, he cannot hope that his hearer would take him to be asserting what he (the liar himself) believes to be true, and unless he takes the liar to do that, he cannot be expected by the liar to believe to be true what he (the liar) asserts and thereby claims to be true though it is not. Therefore, lying can be successful only if it is in the logic of making an assertion that to assert something implies believing it to be true.

But the possibility of lying points to another problem. Since in lying, asserting that p does not imply believing that p, we cannot really have the universal *vyāpti*:

> 'Whenever one asserts that p, he believes that p', but only the lighter one.
>
> 'Generally (ordinarily, normally) when one asserts that p, he believes that p'.

This would not be the *vyāpti* of the kind which, in conjunction with 'This speaker asserts that p' can, according to DK or DU, authorize us to infer 'This speaker believes that p'. According to both of them, we need

a rigorous, fully universal, *vyāpti*, both positive and negative. This would mean that the kind of inference which DU has used or even the other softer one which I have used to show the self-contradictoriness of the sentence 'Inference is not a *pramāna*' is not a foolproof or watertight inference and therefore is not conclusively demonstrative of the latter's self-contradictoriness.

There is another snag in DU's form of inference given to prove the self-contradictoriness present in the claim of the untenability of inference as a *pramāṇa*, arising from the attempt to prove the claim's validity. He calls the inference KHI as Vinītadeva and others do, but with a difference. For the latter, the speaker's *intention* to communicate that inference is not a *pramāṇa* is the *actual* cause of his *uttering* the sentence 'Inference is not a *pramāṇa*'. Therefore, the inference of his intention from his utterance is the inference of a cause from its effect, a clear case of KHI. According to DU, saying that something is such and such is not the real effect of the fact that that thing is such and such when the utterer believes that it is such and such. The latter is the occasion for *saying* that it is such and such. Because it is the occasion for uttering the sentence that it is such and such, the utterance, he says, can be said to be a hypothesized, or imagined, effect (*kalpita kārya*) of that thing's being such and such. And since from the utterance, the imagined effect, it is inferred that the thing is such and such, the inference is KHI. Therefore, here, from the imagined effect, the utterer's sentence 'Inference is not a *pramāṇa*', it is inferred that inference is not a *pramāṇa* because the utterer's belief that inference is not a *pramāṇa* is the occasion (though not the cause) of his utterance.

One may object to inferring from something which is only imagined to be the effect of something else that the latter is there. Since the effect is an imagined effect, the cause concerned could also be an imagined cause. KHI only permits inferring from a real effect its real cause. Inferring from an imagined effect its imagined cause would be an inference in imagination and not a genuine, real, inference from effect to cause, as understood by DK, or even by DU.

There is another, a third way, of showing that 'Inference is not a *pramāṇa*' is self-contradictory or self-stultifying, without making use of any inference, as DU has done, with the *vyāpti*, 'Whenever one asserts that something is such and such, that thing is such and such' or even with the modified one as I have suggested, namely the *vyāpti*, 'Whenever one asserts that something is such and such, he believes that that thing is such and such', and without assuming anything of Buddhist epistemology or metaphysics.

We have to keep in mind, as already stated, that in the present context the proposition, 'Inference is not a *pramāṇa*', (not-IP) is the subject of discussion as an instance of a proposition which cannot be according to DK the conclusion of any PA or of any inference, on the ground that it is self-contradictory. It is not being discussed as the substantive thesis that inference is not a *pramāṇa*. When someone claims that it can be the conclusion of an inference, we may proceed, in a *reductio ad absurdum* manner, as follows.

Admitted, for the sake of the argument, that not-IP can be the conclusion of a valid inference. Then, suppose that it is the conclusion of the valid, inference J, whatever J may be. Quite obviously, one who claims that not-IP can be the conclusion of any J, would also claim that it is true because there is no point making a proposition the conclusion of an inference while already knowing or admitting that it is false. Then, since J is valid inference with the true not-IP as its conclusion, we have here in J a demonstration that there is at least one instance, J, of an inference which is a *pramāṇa*. Therefore, to make 'Inference is not a *pramāṇa*' the conclusion of any inference, whatever that may be, is to show that inference is a *pramāṇa*. It is also to show that no inference can prove not-IP true which is the same thing as saying that no inference can have it as its conclusion because to prove it true is to prove it false. A proposition proving the truth of which by an inference amounts to proving its falsity is definitely self-contradictory, or self-stultifying. Or, we can say, it meets with such a logical catastrophe because of its being self-contradictory.

To contravene anyone of the restrictions on the use of a proposition as the conclusion of an inference would according to DK, mean committing a fallacy, namely the fallacy of having an impermissible conclusion. An inference with a conclusion which is proven false by perception, inference, semantics or linguistic usage, or its self-contradictoriness, does not really have a conclusion; what it has only appears to be, without really being, its conclusion (*pakṣābhāsa*).

3. Conditions which make an Inference Fallacious

3. (a) Non-mention of any Feature of the Logical Reason

According to DK, a PA is as we have seen, the complete statement of the three features of the logical reason (*hetu*). Its three features are: (a) its being necessarily present in the locus, or subject (*pakṣa*), of the conclusion,

(b) its being present only in a thing similar to the locus, and (c) its being never present in a thing dissimilar to the locus. We have also found that to state (b) and to state (c) is to state the same thing. Therefore, even if only one of the two is stated, it is enough. Following this principle, in SPA the features (a) and (b) are stated and in VPA the features (a) and (c). DK[6] says that, since PA has been defined by him as the complete statement of the *hetu*'s three features, non-mention of even a single one of the three features would make the inference deficient or fallacious. DU[7] adds that if the non-mention of one feature can make it fallacious, the non-mention of more than one would also do so. Following this logic, one may say, then no-mention of all the three would make it even more obviously fallacious. Since mentioning (b) or (c) is doing the same thing, we can say that DK's intention is that in a faultless PA, the two features, (a) and (b), or (a) and (c) must be mentioned because that would amount to mentioning all the three features. Since (b) and (c) are equivalent to mention, one would also mean mentioning the other by implication.

Two observations seem to be called for here. Since mentioning the two features (a) and (b), or (a) and (c) amounts to mentioning all the three features of the *hetu* and mentioning one or the other, a conjunction of the two is obligatory to make the inference error-free, DK does not seem to allow any enthymemetic PA, that is, one in which any one of the two features is left unmentioned if it is not considered necessary in a particular context. Secondly, an inference has to exist, has to be there to be fallacious. But if none of the three features of the *hetu* is mentioned, that is, no premise is given—and we have seen that, according to DK, the conclusion does not need to be mentioned—there would be no inference, and therefore no fallacious inference. Therefore, DK's or DU's saying that, when the non-mention of one feature of the *hetu* makes inference fallacious, the non-mention of more than one, or two, or three, features, also would, is not justified. Some feature of the *hetu* has to be mentioned and some other one to be left unmentioned to make possible the existence of a fallacious inference, or of a semblance of an inference which a fallacious inference really is.

To completely state the *hetu* of an inference is to completely state its premises. Since the conclusion is not to be stated, the body of an inference consists only of the set of its premises. Whatever fallacy there may emerge

[6]SNS, NB, p. 260.55.
[7]SNS, NBT, p. 260.

in it would therefore be attributable to some faulty premise, that is, to some fault in the *hetu* of the inference whose complete statement constitutes the set of its premises. That is why an inferential fallacy in DK's logic or Indian logic is called a *hetu* fallacy, a fallacious *hetu*. A fallacious inference therefore, is one which has only an apparent, and not a genuine *hetu* (*hetvābhāsa*), a logical reason which appears to be, or occupies the place of a logical reason but is not really one because of some defect or deficiency in it. Since '*hetu*' and '*sādhana*' both mean the logical reason, an inferential fallacy is also called the fallacy of having an apparent and not a genuine *sādhana* (*sādhanābhāsa*).

The three features of the *hetu* are thus, to be stated to make the inference valid. But this is only a necessary condition of the latter's validity. Even after the required features of the *hetu* have been stated, the inference may be defective if the statement of any one of the three features suffers from some defect. More precisely, according to DK, if any one of the demonstrator and the demonstratee considers the statement of any one of the three features of the *hetu* disconfirmed or uproven (*asiddha*), or doubtful (*sandigddha*), then the inference concerned would be fallacious.[8]

By saying that an argument is fallacious if its proponent, or recipient considers false the statement of any one of the three features of the *hetu*, DK does not want to make the notion of fallaciousness or of its opposite relative to the opinion of the participants in the argumentation, though he may appear to be doing that. To me he seems to make the following point.

An argument is given by its proponent to another person to convince him of the truth of a proposition on the ground that it follows from a set of premises. The set of premises is the HV, the conjunctive statement consisting of three conjuncts, each one being a statement of one of the three features of the *hetu*. If the proponent does not consider on good evidence that the HV is true, and presents it to the recipient claiming it to be true, he would not be playing a fair logical game. If the recipient, on the other hand, does not consider the HV true, he would not consider true its conclusion. Only from a true HV, or from a set of true premises, one cannot validly draw a false conclusion. Therefore, in order to make

[8]*Uktavāpyasiddhau sandehe vā pratipāddyapratipādakayoh.*
SNS, NB, p. 261.56.
Even after stating (the three features of the *hetu* in an inference) if for the demonstrator or for the demonstratee of the inference, the statement (of any of the features) is unproven or doubtful, there occurs in that inference a fallacy.

an argumentation successful, it is necessary that only such premises are used which are true and known to be true to both the participants in the argumentation. Any digression from this procedure would according to DK involve some error in the presentation of the HV. It is an error of this type which he calls a *hetvābhāsa*. A person keen to convince someone else of a truth can be assumed to be motivated to give a set of premises he considers true. But the recipient's acceptance of their truth cannot be ignored. The argument is given to convince him of the truth of the conclusion. Therefore, it is necessary that he also accepts the premises to be true because if he does not, he would not accept the conclusion to be true even if it is true because of being entailed by true premises. As DU says, a *hetu* is given only to convince another person of what its presence in an object or place implies or signifies. Therefore, only that kind of *hetu* should be given whose existence in the object or place is indubitably confirmed.[9] This is only to say that only such a premise should be given about the truth of which the recipient of the argument has no doubt.

3. (b) The Fallacy of Unproven Logical Reason (*Asiddha Hetu*)

An inferential fallacy arises out of the violation or infringement of a rule of inference. The basic or primary rule of inference in DK's logical system is, as already stated, that the *hetu* of every inference, as asserted in its HV, must be (a) present in the locus, (b) present only in the similar to the locus, and (c) never present in the dissimilar to the locus. This is not a syntactical but a semantical rule because it in effect requires that the HV must be true. Since the HV is a conjunction consisting of three conjnucts, to require it to be true is to require that each one of its three conjuncts must be true. His discussion of the fallacies of inference reveals that he also requires the satisfaction of another, a practical rule, to the effect that each one of the three conjuncts must be not only true, but also be known to be true to both of the participants in an argumentation, that is, to both the demonstrator and demonstratee of an inference. The importance of this rule is obvious from the fact that unless one knows that the three conjuncts are true, he cannot use them, even if they are true, to

[9]*Parārtho hi hetūpanyāsah. Tena yah parasya siddhah sa heturvaktavyah.* SNS, NBT, pp. 266–67.

The logical reason is presented only for (demonstrating a truth to) another person. Therefore, only that sort of logical reason be presented which is, in the latter's judgement, well proven.

demonstrate what follows from them, nor can he accept what follows from them if someone else uses them to show the latter to him.

I call the above a practical rule because the validity of any inference is determined only by a certain kind of relationship between the truth-values of its premises and those of its conclusion; it is not at all relative to anybody's knowledge of them. If it is not possible for its premises to be true and its conclusion to be false, it would be valid no matter what opinion one holds about their truth-values, or even about the logical relationship between the truth-values of its premises and those of its (alleged) conclusion. But in spite of this sort of objectivity implicit in the notion of validity, it is of great practical importance for a logically fruitful termination of any argumentation between two persons that both of them know that the premises are true if they are true and that under such and such a condition the argument would be valid (or invalid).

According to DK, when the first part of the rule of inference—that the *hetu* must be present in the locus—is violated, the fallacy of unproven (*asiddha*) *hetu* occurs. That is, it occurs when it is asserted that the logical reason exists in the locus but it is not a proven truth that it does. When we say that x is not proven to exist in y, ordinarily it means that we are in a state of doubt or uncertainty about the existence, or non-existence of x in y, that we do not know whether or not x exists in y. In such a situation, we admit that x may or may not be there. This state of affairs is different from that in which it is proven that x does not exist in y. When this is the case we are not in a state of doubt about the existence or non-existence of x in y; rather, we are certain of x's non-existence in y. Saying that it is not proven that x exists in y is thus, very different from saying that it is proven that x does not exist in y, though it is easier to slip from 'not proven to exist' to 'proven not to exist'. An astute logician like DK cannot be accused of having made this slip. The fact of the matter with him is that in the term '*asiddha hetvābhāsa*' he uses '*asiddha*' to include *both*, a logical reason which is proven not to exist in the locus and also one which is not proven to exist in the locus. The meaning of the Sanskṛt word '*asiddha*' is closer to that of unproven or not proven, than to that of disproved, or proven to be non-existent (or false). DK certainly does not mean by an *asiddha hetu* only a *hetu* disproved to be existent (or proven to be non-existent) in the locus because he also calls a doubtful (*sandigddha*) *hetu asiddha*. A doubtful *hetu* is quite obviously not a disproved *hetu*. In the present discussion of *asiddha hetvābhāsa*, I shall also use 'unproven', in a broad sense, for '*asiddha*', including under the category of unproven logical reason (*asiddha hetvābhāsa*), a disproved logical reason,

that is, one which has been proven to be non-existent in the locus, as well as a doubtful one, that is, one which has not been proven to be existent in the latter. But to avoid confusion, or conflation, I shall use for '*asiddha hetu*' 'disproved logical reason' when DK means by it a *hetu* known or confirmed to be non-existent in the locus, and 'doubtful reason' for it when he means by it a *hetu* which is not known, or not confirmed to be existent in the locus.

If the presence of the *hetu* in the locus is unproven (*asiddha*), that is, if it is not a proven or confirmed truth that the *hetu* exists in the locus or that it is attributable to the locus, then the statement of the presence of the *hetu* in the locus would be defective. Since this statement is one of the conjuncts of the HV, which constitutes the inference, if it is defective, it would make the entire HV or inference defective or fallacious. Since it is a deficient *hetu*, a *hetu* which is deficient because its presence in the locus has not been proven true which makes the inference fallacious or invalid, such an inference is said to suffer from the fallacy of unproven *hetu* (*asiddha hetvābhāsa*). Or, its *hetu* is said to be a fallacious *hetu* because of not having been proven to be truly present in, or predicable of, the locus.

(1)

As an example of an inference suffering from the fallacy of a logical reason which is considered by both of the participants in the argumentation to be non-existent in the locus, DK offers:

Sound is non-eternal
because
It is visible.

In this case both of them agree that visibility, the *hetu*, is not a property of sound.

This example of a fallacious inference, or the fallacy it is intended to exemplify needs some comments. Since both the demonstrator and the demonstratee of this argument are convinced of the fact that its *hetu* does not belong to its locus, it is very unlikely for the former to present it to the latter. Rather, it is very unlikely that the fallacy it is given to exemplify would ever be committed. It is like one geometrician giving the argument:

A triangle is non-circular
because
It is rectangular,

to another. This argument is not more unlikely to be given than is the above-mentioned argument by DK, nor is the fallacy it commits more unlikely to be committed than the fallacy illustrated by DK's. In fact, this argument commits exactly the same fallacy which DK's example does. In both of them, the fallacy consists in the absence of the *hetu* in the *pakṣa*; both infringe the rule that the *hetu* must be present in the *pakṣa*. Neither is any sound visible, nor is any triangle rectangular. And, in each case the fallacy is too obvious to remain unnoticed. There is no point in categorizing or discussing such an inferential fallacy which is extremely unlikely to be committed, or which is so glaring that anyone would call it a fallacy. He would be a rare, or strange, person indeed who offers a premise which he knows to be false to another person who also knows that it is false.

(2)

A fallacious inference in which the demonstrator considers the *hetu* to be true of the locus and the demonstratee considers this *hetu* to be false of the locus he illustrates by:

Trees are sentient
because
They die after the complete removal
of their bark.

The proponent (*vādī*) of this argument who is an adherent of the *Jaina* philosophy, considers liability to die the *hetu* to be true of trees. By the death of a tree he means its drying up after the complete removal of its bark. He calls its bark its skin. Therefore, he would consider the argument valid. But the Buddhist recipient of the argument, the opponent (*prativādī*) on the other hand, holds that liability to die is not true of a tree. By death he means the cessation of consciousness or life which no tree has. Since one of the two participants in this argumentation, the demonstratee, considers the *hetu* to be untrue or disconfirmed of the locus, this argument, as per DK's definition of validity is invalid in spite of the fact that the other participant, the giver of the argument, considers the *hetu* to be true of the locus.

The Buddhist characterization of the above argument as invalid has to do more with metaphysics than with logic. For the *Jaina* the argument involves no fallacy. Since he considers the bark of a tree to be its skin, he can provide the true *vyāpti* 'Whatever dies after the complete removal of its skin is sentient'. Since the Buddhist holds a conception of death

or of the liability to die which is very different from the *Jaina*'s he is not willing to call a tree's drying up after the removal of its bark its death, though common sense would call a completely dry, sapless, tree dead. It is not a brute fact, but the *Jaina*'s interpretation of a brute fact—the drying up of a tree after it is completely debarked—which makes the PV of the inference, for him, true, and the Buddhist's interpretation of it, for him, false. But since one participant in the argumentation considers the PV false, the argument suffers, according to DK, from the fallacy of unproven logical reason (*asiddha hetvābhāsa*).

(3)

The third type of inference suffering from the fallacy of *asiddha hetu* is the following which is an inference made by the *Sānkhya* philosopher in order to prove that pleasure, pain, etc. are unconscious:

> Pleasure, etc. are unconscious
> because
> They have an origin,
> or are non-eternal.

This argument is fallacious because, as per the *Sānkhya* philosophy, the proponent's own philosophy, pleasure, etc. neither can be said to have an origin, nor to be non-eternal. According to the Buddhist opponent of this argument, a thing can be said to have an origin if it did not exist before its origination. But the *Sānkhya* philosophy holds that the effect pre-exists in its cause before its effectuation or production. Therefore, it cannot hold anything to have any origin. Secondly, the Buddhist says, a thing can be said to be non-eternal only if it does not exist in any form after its destruction, only if it leaves no after-effect. But even this view is not acceptable to the *Sānkhya* philosophy because it does not admit that anything is absolutely annihilated or destroyed. Nothing, according to it, can be held to be non-eternal. Therefore, the *Sānkhya* proponent of the above argument can neither hold that pleasure, pain, etc. have an origin, nor that they are non-eternal. This means that the *hetu*, as per his own philosophical commitment, does not exist in the locus, and therefore the argument commits the fallacy of *asiddha hetu*.

Here the proponent does not consider the PV 'They have an origin, or are non-eternal' to be false. The Buddhist opponent too would not call it false because pleasure, pain, etc. according to him, have an origin and are also non-eternal. But he declares it fallacious on the ground that

the proponent, the *Sānkhya* philosopher has to consider it false as required by his own metaphysics. This means that in offering it as a true proposition he is flouting the logic of his own metaphysics. That is, even if it is true, he cannot call it true; the Buddhist, on the other hand, can. This is an *ad hominem* criticism of the *Sānkhya* argument. The argument is fallacious not because the PV is false but because the proponent has to consider it false to be consistent with his own metaphysical commitments. Therefore, DK is using here the term *'asiddha hetvābhāsa'* in an extended sense in calling this argument an example of *asiddha hetvābhāsa*. It is not fallacious because the *hetu* does not exist in the *pakṣa*, or because it is doubtful that it does, as is the case in a straighforward example of the *asiddha hetvābhāsa*.

When there is doubt about the identity of the *hetu*, or about the individuation or existence of the locus in which the *hetu* is said to exist, in both of the cases, there occurs the fallacy of doubtful (*sandigdhā-siddha*) logical reason, the other variety of the unproven logical reason.

(4)

As an example of an inference in which the identity of the (alleged) *hetu* itself is in doubt, or in question, a case like the following can be cited.

One notices at a place a vapour-like phenomenon which he *suspects* to be smoke. He is not sure whether it is vapour or smoke. But due to its apparent resemblance to smoke he uses its presence there as a *hetu* to infer the existence of fire there. In this inference there would occur the fallacy of doubtful *hetu* because, says DU, only an unquestionable or doubtless instance of smoke at a place is the *hetu* for inferring the existence of fire there.[10] The presence of the phenomenon used to infer that of fire here is not an indubitable instance of the presence of smoke. The inferer himself is doubtful of the phenomenon's really being smoke, but still makes the inference. Such an inference is bound to be fallacious because of that very reason, that is, because of its *hetu* being of a doubtful nature to the proponent of the inference.

(5)

The fallacy of doubtful locus (*pakṣa*) exists when the exact individuation of the locus is a subject of doubt or when the locus is not definitively

[10]*Dhūmatayā niścito vahnijanyatvād gamakah.*

SNS, NBT, pp. 268–69.

Only a (phenomenon) ascertained to be smoke is a logical reason for fire because smoke originates from fire.

localizable. This fallacy is called the fallacy of the doubtful identity of the locus (*āśrayaṇāsiddha*). Suppose one hears the voice of a peacock coming from a cave. But since there are so many caves very close to one another, he is not sure exactly from which cave the voice is coming. Even then, he draws the inference:

> There is a peacock in that cave
> because
> A peacock's voice is being
> heard here.

The identify of the *hetu* is not in doubt here. It is definite that any place, wherefrom a peacock's voice is coming has a peacock. But the identity of the locus (*pakṣa*), the cave from which the voice is coming, is doubtful or uncertain to the inferer. The fallacy involved here is obviously not a *hetu* fallacy a *hetvābhāsa*, but still DK includes it in his list of *hetvābhāsas*.

(6)

The sixth kind of unproven logical reason (*asiddha hetvābhāsa*) occurs when the locus itself is considered to be non-existent or unreal. For example, if one, a *Nyāya* philosopher, who believes that the self is a substance, argues that:

> The self is present everywhere
> because
> Its attributes are cognized
> everywhere,

the locus of the inference is the self, which is said to have the *hetu*, the attributes cognizable everywhere. On that ground it is inferred to be present everywhere. But for the Buddhist, such a substance-like self, which can have any attribute does not exist. Therefore, there is no possibility of its having attributes cognizable everywhere, or rather, of its having any attribute whatsoever.[11] Since the locus of this inference is proven to be non-existent (*asiddha*) for its (Buddhist) demonstratee, there is the fallacy of unproven logical reason (*asiddha hetvābhāsa*) in it as well.

Both (5) and (6) exemplify a fallacious logical reason, a *hetvābhāsa*, in an extended sense of the term '*hetvābhāsa*' because, in each one of them, the fault lies not in the *hetu* but in the locus. In (5) the inferer is not sure from which cave the voice of a peacock is coming, though there

[11]Ibid., p. 271.

is no doubt of the peacock's voice coming from a particular place being the *hetu* for inferring the presence of a peacock at that place. Unless a peacock is there, its voice cannot be heard coming from there. Similarly, in (6), there is no doubt about the cognition of an attribute at a place being the *hetu* for inferring the existence there of the substance whose attribute it is. An attribute cannot be cognized at a place unless the object whose attribute it is, is there. The inference in (6) is therefore fallacious because the locus is missing, or non-existent, according to the Buddhist demonstratee of the argument. When there is no self it is wrong or logically impermissible, the latter would say, to make any assertion to the effect that its attributes are (or are not) such and such. Of a non-existent object, it makes no sense to say that a certain *hetu* exists (or does not exist) in it. Therefore, no erroneous *hetu* is present in (6), or even in (5). Of the three components of DK's basic rule of inference—that the *hetu* must be present in the *pakṣa*, present only in the similar to it, and never present in the dissimilar to it—none is violated by (5) and (6). A Buddhist cannot say that an attribute cognizable everywhere, the *hetu* in (6) does not exist in the non-existent self. An attribute can meaningfully be said to exist or not to exist, only in an existent object. An object must exist to have or not to have an attribute. Both (5) and (6) are erroneous, or impermissible, inferences and the error or fallacy involved in them can be called an inferential error. But it cannot be called a *hetu*-error, a *hetvābhāsa*, unless '*hetvābhāsa*' is used in an extended sense or in a sense which makes it equivalent to any inferential error.

DK's reason for calling (5) and (6) examples of *hetvābhāsa*s, to me seems to be his unstated presupposition that the locus (*pakṣa*) of every inference must be a definite, localizable, singular, existent thing, person, or place, etc. It may even be said to be an unstated component of his basic rule of inference. If this point is acknowledged, the fallaciousness of (5) and (6) becomes obvious since both violate this component. Example (5) violates it because its *pakṣa* is not definitively localizable, and (6) because its *pakṣa* is non-existent. It is this unstated component to which I pointed when I said that the *pakṣa vākya*, the sentence asserting the presence of the *hetu* in the *pakṣa*, the locus, for DK, must be a singular, affirmative, existential proposition.

But in spite of some differences among the six types of fallacies of the unproven *hetu* discussed above, each one of them is equally effective in making an inference suffering from it infructuous or non-probative. An inference whose *hetu*'s existence in its *pakṣa* is disconfirmed (*asiddha*) or doubtful (*sandigddha*), says DU, cannot yield any conclusion. From this we can neither conclude that the *sādhya*, the inferable object exists

in the *pakṣa*, nor that it does not, nor that it is doubtful that it does. Such an inference cannot be a means to acquiring any kind of knowledge.[12]

3. (c) The Fallacy of Non-exclusive Logical Reason (*Anaikāntika Hetu*)

The other feature of the *hetu*, we have seen, when stated affirmatively is that it has to be present only, or, exclusively, in the things which are similar to the *pakṣa*. Stated transpositively, it means that it must be absent in everything which is dissimilar to the *pakṣa*. Its exclusive (*aikāntika*) presence in the similar would be guaranteed only if it is a proven truth that it is always absent or never present in anything dissimilar to the *pakṣa*. If it is disconfirmed (*asiddha*), or doubtful (*sandigddha*), that it is always absent in everything dissimilar to the *pakṣa*, it would lose its exclusivity (*aikāntikatā*), its claim to be exclusively present only in things similar to the *pakṣa*. Therefore, it would then become fallacious. This fallacy is accordingly named by DK the fallacy of non-exclusive logical reason (*anaikāntika hetvābhāsa*) because the *hetu* would then be non-exclusive. It would then be present not exclusively or only in things similar to the *pakṣa*. We can also say that this fallacy arises when the rule that the *hetu* must never be present in the dissimilar is infringed. This is equivalent to saying that it arises when the rule, that the *hetu* should be present only or exclusively in things similar to the *pakṣa*, is infringed. This is so because the two rules are logically equivalent.

As already pointed out, anything is said to be similar to the *pakṣa*, a *sapakṣa*, when it has the *sādhya*, the inferable object which the *pakṣa* is claimed to have in the inference. In a like manner, anything is said to be dissimilar to the *pakṣa*, an *asapakṣa*, or *vipakṣa*, if it does not have the *sādhya*. Assuming that p stands for the *pakṣa*, s for the *sādhya*, and h for the *hetu*, the fallacy of non-exclusive logical reason (*anaikāntika hetvābhāsa*) would be committed by h if it is disconfirmed (*asiddha*), or doubtful

[12]*Asiddhatvād eva ca dharmiṇyapratipattihetuh.*
Na sādhyasya, na viruddhasya, na
sanśayasya heturapi tvapratipattihetah.
Ibid., p. 262.

Being unproven (disconfirmed, or doubtful), this (*hetu*) is not a means to any cognition about the subject of the inference. It is a means neither to cognizing the existence, nor the non-existence, of the inferable object (in the subject), nor to entertaining any doubt about its existence (in the subject). Rather, it is a means only to absence of cognition.

(*sandigddha*), that h is always absent in everything which is dissimilar to p. Therefore, any inference of the type:

p has s
because
p has h,

when it is not a proven truth that h is never present in anything dissimilar to p, that is, in anything which does not have s is bound to suffer from this fallacy. Such an inference can validly prove neither the existence nor the non-existence, of s in p. It can only generate some doubt about s's existence or non-existence in p.[13]

3. (c) (i) Non-exclusiveness of the *Hetu* arising from its Disconfirmed Absence in any Dissimilar

As an example of an argument whose *hetu* is present in the similars and also in all or some of the dissimilars, DK gives:

Sound is non-eternal, etc.
because
It is knowable, etc.

DU's interpetation[14] of this argument is that in adding 'etc.' after 'non-eternal' and 'knowable' DK has in mind, besides these two, some other predicates as well. When those predicates are explicitly stated, this argument is found to be a multiple one consisting of or breakable into, the following:

(1) Sound is non-eternal
because
It is knowable, like a jar and the sky.

This argument is fallacious because knowability, the *hetu*, is present in things similar as well dissimilar to the *pakṣa*, sound, which is said to be non-eternal. A jar is non-eternal and therefore similar to sound. The sky is eternal and therefore dissimilar to sound. But knowability is present in both. Therefore the *hetu*, knowability, is non-exclusive. It is not present

[13]Ibid., p. 273.
[14]Ibid., pp. 273–76.

exclusively or, only, in things similar to sound, and consequently involves the fallacy of non-exclusive logical reason (*anaikāntika hetvābhāsa*).

(2) Sound is not a product of effort
because
It is non-eternal, like lightning, the sky, and a jar.

Here lightning and the sky are similar to sound because they also are not products of anyone's effort, as sound has been claimed to be in the argument. The *hetu*, non-eternality, is present only in lightning and not in the sky. Therefore, it is not present in all similars, as a *hetu* ought to be. In addition, it is present in all dissimilars, that is, in all things, like a jar, which are dissimilar to sound in being products of effort. Everything which is a product of anyone's effort is non-eternal because it has a beginning; it comes into being only when an effort is made to produce it and the effort is successful. This *hetu*, too, thus, suffers from the fallacy of non-exclusivity (*anaikāntikatā*).

(3) Sound is a product of effort
because
It is non-eternal, like a jar,
lightning, and the sky.

The *hetu* of this inference is non-eternality. Lightning and the sky are dissimilar to the *pakṣa*, sound because they are not products of anyone's effort, and a jar is similar to the *pakṣa* because it is a product of someone's effort. The *hetu* is present in lightning, the first dissimilar because lightning is non-eternal, and it is not present in the second, the sky, because the sky is eternal. As far as the similars are concerned, the *hetu* is present in all of them, since everything which is a product of someone's effort is non-eternal, as already shown in (2). This *hetu* too, is not absent in all dissimilars, as it ought to be, since it is present in lightning, and therefore is fallacious.

(4) Sound is eternal
because
It is formless (*amūrtta*), like
the sky, an atom, an action and a jar.

Here the sky and an atom are similars (*sapakṣa*) because they are, like sound, eternal. An action and a jar are dissimilars (*vipakṣa*) because they are not eternal. The *hetu*, formlessness, is present in a similar, the sky, and also in a dissimilar, an action, because both the sky and an action are formless. It is absent in a similar, an atom, and also in a dissimilar,

a jar, because both an atom and a jar have some form. Therefore, it is not absent in all dissimilars, as it is required to be, and therefore is fallacious.

DU[15] concludes his discussion of these four examples by saying that in all of them the absence of the *hetu* in everything dissimilar to the *pakṣa* is disconfirmed (*asiddha*). Therefore, the *hetu* in them is non-exclusive (*anaikāntika*). Consequently, all of them are fallacious. What he means to underline is that all of them infringe the rule of exclusivity, the rule that the *hetu* must be absent in all the *vipakṣa*s, the dissimilars to the *pakṣa*. The other way of saying it is that they infringe the rule that the *hetu* should be present exclusively in the *sapakṣa*s, the similars to the *pakṣa*.

All of these examples have been purposely phrased in such a way that they illustrate the fallacy to exemplify which they have been given by DU. They are not natural, not like actual fallacious arguments we sometimes use, knowingly or unknowingly in our normal transactions. But this is not true only of DU, or DK. Even modern logicians present purposely designed, artificial-looking arguments to illustrate the commission of inferential fallacies, to illustrate valid argument-forms, or to test the student's ability to detect fallacies, or to prove the validity of valid arguments. Purposely designed arguments do this job better than arguments picked up from ordinary life, even though they look a little unnatural or non-ordinary.

3. (c) (ii) Non-exclusiveness of the *Hetu* arising from its Doubtful Absence in any Dissimilar

What is true of the infringement of the rule 'The *hetu* must be present in the *pakṣa*', is also true of that of the rule of the *hetu*'s exclusivity. The latter also gets infringed if it is doubtful (*sandigddha*) that the *hetu* is absent in anything dissimilar to the *pakṣa*. A doubtful *hetu* is also like the disconfirmed one non-exclusive because it is not proven or confirmed that it is exclusively present in the similars. Of a disconfirmed non-exclusive *hetu* we *know* that it is not absent in all dissimilars, whereas of a doubtful one we know neither that it is, nor that it is not, absent in all of them, and therefore it too cannot be an instrument for drawing an inference validity.

DK gives the following example to illustrate how it works:

That person is non-omniscient or
non-free from passions
because
He speaks (or has the property of speaking).

[15]Ibid., p. 275.

Here that person, referring to a particular person as intended by the inferer is the *pakṣa*, non-omniscience or non-freedom from passions the *sādhya*, and the property of speaking the *hetu*. The *sādhya* is a disjunctive compound, but the logic of the argument can be explained even by taking one of the two disjuncts as the *sādhya*. Therefore, I shall use only 'non-omniscience' as the *sādhya*. Then the *vyāpti* assumed in the argument would be:

> Whoever speaks is non-omniscient (*asarvajña*) and whoever is omniscient (*sarvajña*) does not speak.

Since non-omniscience, or the *pakṣa*'s being non-omniscient is the *sādhya*, a non-omniscient being other than the *pakṣa* would be a *sapakṣa*, a being similar to the *pakṣa*, and an omniscient being a *vipakṣa*, a being dissimilar to the *pakṣa*. What DK wants to demonstrate is that this argument is fallacious because it is doubtful or unconfirmed that its *hetu*, the property of speaking, is always absent in every *vipakṣa*, that is, in every omniscient being. The doubtfulness of its absence in the *vipakṣa* makes it a non-exclusive (*anaikāntika*) *hetu* of the doubtful (*sandigddha*) variety. A non-fallacious *hetu* must not only be absent in all *vipaksa*s, but it must also be known to be a proven, doubt-free, truth that it is absent in all of them.

In demonstrating the fallaciousness of the argument, DK and DU bring in some technical ideas of Buddhist epistemology and metaphysics. But even without referring to them, the point they want to make can be explained. Therefore I shall not refer to them. I shall only explain how DK and DU try to demonstrate that the *hetu* of the argument infringes the rule 'A *hetu* must be absent in all *vipakṣa*s' because of its being doubtful that it is absent in all of the *vipakṣa*s.[16]

This argument was given by some non-Buddhist philosophers to prove that Buddha was not omniscient (and free from all passions) because he made speeches in delivering his sermons. DK and DU seem to think that by bringing in the particular epistemological metaphysical ideas they bring in, they would more convincingly prove the fallaciousness of the argument. But that does not seem to be the case. The success of their attempt would depend on their logical demonstration that the *hetu* of the argument violates the rule of exclusivity, the rule that the *hetu* should be present exclusively in similars, that is never present in any dissimilar.

We can prove that this argument is valid if we can prove that no omniscient person has the property of speaking. But we have no cognition of anyone who is omniscient and a non-speaker because we have no

[16]SNS, NB & NBT, pp. 276–98.

cognition of any omniscient person. We have seen that in *Anupalabdhi hetu* inference, according to DK, the *hetu* is the non-perception of a thing at a certain place, from which we infer the non-existence of that thing at that place, given the satisfaction of certain conditions. Therefore, it may be said that from not perceiving any omniscient person anywhere we can infer that there is no omniscient person, and therefore that there is no omniscient person with the property of speaking. DK rejects this possibility by reminding us that from the non-cognition of an object, its non-existence can be inferred only if the object concerned is perceivable. That is, only if it is an object which would be necessarily perceived if it exists and the other auxiliary conditions of its perception are fulfilled.[17] On the other hand, if it is, by its very nature, unperceivable, that is, an *object which would not be perceived even if it exists and auxiliary* conditions for its perception are fulfilled, then, from its non-cognition we cannot infer its non-existence. Omniscience, according to DK, is unperceivable. We cannot perceive, or cognize, that someone is omniscient even if he is omniscient. Therefore, from not cognizing anyone to be omniscient we cannot infer that there is no omniscient person and therefore that there is no omniscient person who has the property of speaking. This means that we cannot be ever sure that no omniscient person has the property of speaking; we shall always remain doubtful of an omniscient person's not having it. Therefore, its absence in the *vipakṣa*, the omniscient person being doubtful, the *hetu*, the property of speaking, is a non-exclusive logical reason (*anaikāntika hetu*) and makes invalid the above-mentioned argument which uses it to yield the conclusion 'That person is not omniscient'.

In course of illustrating with the help of this argument, the fallacy of a doubtful non-exclusive logical reason, DK and DU also try to prove the substantive proposition that there is no incompatibility, empirical or logical, in an omniscient person's being a speaker. This they do specifically when they present a theory about the ways in which the presence of one thing or property can be incompatible with that of another thing or property. Their trying to do it is trying to prove the metaphysical thesis that an omniscient being does not have to be a non-speaker or that it is not impossible that one is both an omniscient person and also a speaker. This is an independent thesis and therefore has not been discussed here. Since we are concerned only with DK's logic, only his explanation of the nature of the fallacy of doubtful non-exclusive reason (*sandigddha anaikāntika hetvābhāsa*), via his examination of the argument discussed

[17]See this book, Chapter 5.

here, has been presented. This is all that we need to know what he means by a doubtful non-exclusive logical reason.[18]

3. (c) (iii) Non-exclusiveness of the *Hetu* arising from the Disconfirmation of One, and Doubtfulness of the Other, of its Two Features, Presence only in Similars and Absence in all Dissimilars

So far we have discussed the fallacy of non-exclusive *hetu* arising from the fact that the absence of the *hetu* in the dissimilar (*vipakṣa*) is disconfirmed or is doubtful. But it would also arise from another fact of a little more complex nature, a fact which consists in the disconfirmation of one and the doubtfulness of the other of the two features, namely, its presence in all similars (*sapakṣa*s) and its absence in all dissimilars (*vipakṣas*).[19] If both, its presence in the similar and absence in the dissimilar are disconfirmed, it would be, according to DK, a contrary (*viruddha*) *hetu* and not a non-exclusive (*anaikāntika*) one. It would be a contrary *hetu* because it would then prove the contrary, or the negation, of the intended conclusion. We will discuss it in the next section.

As an example of a fallacious argument in which the required absence of the *hetu* in all dissimilars is disconfirmed (*asiddha*) and its equally required presence only in a similar is doubtful, DK gives:[20]

> That person is passionless (*vītarāga*) or
> omniscient (*sarvajña*)
> because
> He is a speaker (*vaktā*).

In this argument, the property of being a speaker is the *hetu* and anyone who is neither passionless nor omniscient, a *vipakṣa*, a person dissimilar to the *pakṣa*, the particular person referred to by 'that person', the subject of the conclusion. The presenter of the argument (*vādi*) is, quite obviously, says DU, himself one such person and is also seen to be a speaker[21] because he has uttered the words the argument consists of. Therefore he is an example of a *vipakṣa*, a dissimilar in which the *hetu* is present. This fact proves that the *hetu* is not absent in all dissimilars, as it is required to

[18]SNS, NB & NBT, pp. 279–98.
[19]SNS, NB, p. 307.93.
[20]Ibid., p. 308.94.
[21]SNS, NBT, p. 308.

be. Therefore, the argument suffers from the defect of having a *hetu* whose required absence in all dissimilars stands disproven (*asiddha*).

Any (other) person who is passionless or omniscient would be a *sapakṣa*, a person similar to the *pakṣa*. The *hetu* is required to be present only in similars. Therefore, if one is a speaker then he must be also passionless or omniscient. But the property of being passionless, as well as that of being omniscient is non-sensible (*atīndriya*), non-cognizable by sense-experience. Therefore, an ordinary person cannot know of any person that he is passionless or omniscient and consequently he cannot be sure of any speaker that he is passionless, or omniscient.

Even if a speaker is passionless or omniscient, one would not know that he is, because he has no means to know that he is. Therefore, he would be always doubtful of a speaker's being passionless or omniscient. This means that the *hetu* of the argument is doubly defective because its absence in all dissimilars is disproved (*asiddha*) and its presence only in a similar is doubtful.[22]

Perhaps nobody has given such an argument. Still, using it as an illustration of the kind of fallacy DK has in mind is not pointless. It may not be illustrating a fallacy actually committed by someone, but it does illustrate a fallacy which it is possible to commit.

DU has tried to show here that the argument involves this fallacy by pointing out the fact that its presenter is himself an example of a *vipakṣa* in which the *hetu* is present when as per the basic rule of inference, the *hetu* must never be present in any *vipakṣa*. This is an *ad hominem* criticism which is not considered very elegant in logical disputation. But it does not weaken DU's explanation of the fallacy because it is not unavoidable. He could have pointed to any other person, even to himself, as an example of a passionable or non-omniscient person with the property of being a speaker. Perhaps he uses the example of the arguer himself to silence him by pointing out that his own being what he is invalidates his argument.

Suppose the arguer denies DU's accusation and says that he is passionless (or omniscient) and therefore, his being a speaker does not prove the presence of the *hetu* in a *vipakṣa* (that is, does not disprove the absence of the *hetu* in all *vipakṣa*s). Then, if he shows a passion, say his anger in the disputation, DU can say that he is not passionless because he has just now exhibited his passionableness, that is, his potentiality or proneness to have a passion, by expressing his feeling of anger. This he can do because he would admit that passionableness (or absence of omniscience) is sensually cognizable. The arguer's passionableness is

[22]Ibid., pp. 308–9.

sensuously cognized by observing him expressing his feeling of anger (and his lack of omniscience can also be sensuously cognized by observing him putting his potatoes in a bucket of cold water in order to boil them if he is found doing that). But passionlessness (or omniscience) as a state of the mind is not, according to DU, sensuously cognizable. Therefore, when the arguer claims to be passionless (or omniscient) and does not express any passion, etc. DU has to use his doctrine of its being sensuously not cognizable. He may then say something like the following: That you are, or anyone is passionless, is not sensuously cognizable and therefore we would always remain doubtful of the tenability of calling *anybody* passionless and therefore of calling any speaker a passionless person. As a mental state, anybody's passionlessness or omniscience, is not, as DU rightly says, sensuously cognizable. Any speaker's, or anybody's claim to being passionless or omniscient, would always remain a matter of doubt Therefore, any proposition asserting that whoever is such and such (say, a speaker) is passionless or omniscient would be doubtful and therefore would make the argument in which it occurs invalid.

3. (c) (iv) Non-exclusiveness of the *Hetu* arising from the Doubtfulness of its Presence in the Similar and of its Absence in the Dissimilar

A *hetu* would certainly be non-exclusive (*anaikāntika*) and therefore defective when both of its two features, its presence only in similars (*sapakṣas*) and its absence in all dissmilars (*vipakṣas*) are doubtful. DK tries to illustrate such a *hetu* by:

> The living body has a self
> because
> It performs the functions of breathing,
> etc.[23]

Here the performance of functions like breathing, and opening and closing the eyes, is the *hetu*, the living body, the *pakṣa* and having a self, the *sādhya*, the thing inferred to be true of the *pakṣa*. The positive *vyāpti* used, though not stated, is 'Anything which performs the functions of breathing, etc. is selfful, a being with a self in it (*sātmaka*)', and its negative equivalent is 'Nothing which is selfless, without a self in it (*nirātmaka*) performs the functions of breathing, etc.'. A being having a self would be

[23]SNS, NB, p. 310.97.

a *sapakṣa*, a thing similar to the *pakṣa* and a being having no self a *vipakṣa*, a thing dissimilar to the *pakṣa*. The uniqueness of this argument according to DK, is that the *sapakṣa* and *vipakṣa* constitute a dichotomy. The selfful (*sātmaka*) and selfless (*nirātmaka*), the *sapakṣa* and *vipakṣa*, exhaust all the existing things of the world. Everything must be either selfful or selfless, as there is nothing in addition to the two. And, since each one is the contradictory of the other, nothing can be both selfful and selfless.[24] By 'self', what is meant here is a substantive self, a substance in which the property of consciousness is claimed to inhere. Some such argument was given by the *Nyāya-Vaiśeṣika* school to prove the existence of a substantive self. Since Buddhists do not admit the reality of a substantive self, it is important for them to prove that this argument is fallacious. This DK and DU try to do by claiming to show that it involves the fallacy of a peculiar kind (*asādhāraṇa*) of non-exclusive *hetu* whose existence only in the similar, as well as non-existence in the dissimilar, is equally doubtful. We shall discuss DK's and DU's examination of the argument only to see how does it illustrate the peculiar variety of the fallacy of non-exclusive *hetu* which they claim it illustrates. We shall not try to assess whether or not they succeed in proving that there is no substantive self in a living body, or in anything whatsoever. We shall also not question, but take it as valid, their assertion that a *hetu*, whose presence only in the similar and absence in the dissimilar, are doubtful, is a fallacious *hetu* (*hetvābhāsa*). It is obvious that any *hetu*, h, cannot justify the conclusion that the *pakṣa*, p, has the *sādhya*, s, on the ground that p has h, when it is doubtful that whatever has h, has s and whatever does not have s does not have h as well.

DU's reason for calling the *hetu* of the above argument unique or non-ordinary (*asādhāraṇa*) is that since its *sapakṣa* and *vipakṣa*, the similar and the dissimilar, taken together exhaust all existing things, the required presence of the *hetu* only in the similars has to remain unconfirmed or doubtful. 'Having a self', the *sādhya*, is inferred to be true of the living body on the ground of its performing the functions of breathing, etc. A thing similar to the *pakṣa*, the subject of the conclusion, would be a thing which performs the functions of breathing, etc. and which is empirically found to have a self as well. But everything which exists either has or does not have a self. Therefore, it is not possible to locate a thing, different from both, the selfful and the selfless, the *sapakṣa* and the *vipakṣa* which performs the functions of breathing, etc. and is also selfful. But only on the basis of examples of such things which perform the functions of

[24]Ibid., p. 316.99.

breathing, etc. and are found in experience to be selfful, and have not been already, before finding them to be so, known or assumed to be selfful, that we can establish the positive *vyāpti* 'Anything, which performs the functions of breathing etc., is selfful'. Since no such example, nothing which is different from both the selfful and selfless and performs the functions of breathing, etc. is possible because the dichotomy of the selfful and the selfless exhaust all that exists, there is no way to be sure that the *hetu*, performance of the functions like breathing, etc, is present only in the *sapakṣa*s, that everything which performs the functions of breathing, etc. has a self.[25] We cannot even *assume* of a particular thing that it is different from both the selfful and the selfless because it is logically impossible to be different from both of them. This means that we cannot have the positive *vyāpti* (*anvyaya*), 'Anything which performs the functions of breathing, etc., is selfful'. But then we cannot have the negative *vyāpti* (*vyatireka*), 'Nothing, which is selfless, performs the functions of breathing, etc.' The latter is, according to DK, only the transpositive of the former, a negative formulation only verbally different from it. Therefore, when the positive *vyāpti* cannot be established, the negative one too cannot be.[26] This means that we cannot infer that a living body, which performs the functions of breathing, etc. has a self. But we cannot also infer that it does not have a self because we are not sure that if a thing does not perform such functions, it does not have a self. To be in such a state of mind is to be in a state of doubt about the truth of the conclusion. All this happens because we are not sure not only of the *hetu*'s presence only in *sapakṣa*s and absence in all *vipakṣa*s, but also, says DK, of its presence in any *vipakṣa*.[27] The *sapakṣa* and the *vipakṣa*, taken together exhaust the universe. Therefore, to be doubtful about its presence in a *sapakṣa* only and in any *vipakṣa* is to be without knowledge of whether there is any class of things in all members of which it is present (or even absent). Such a *hetu* obviously cannot lead one to any conclusion.

The fall-out of this logical predicament would obviously be that in such a case, the presence of the *hetu* in all *sapakṣa*s, as well as its absence all *vipakṣa*s, would only be a matter of doubt. Since there could be only two types or categories of things, selfful and selfless, all that we can say is that the *hetu*, performance of functions like breathing, etc. is present, if it is present in anything, either in selfful, or in selfless, things. But in

[25]SNS, NBT, pp. 311–19.
[26]SNS, NB, p. 321.107.
[27]SNS, NBT, pp. 322–24.

exactly which one of the two categories of things it is always present and in which one always absent would be only a matter of indefinite (*aniścita*) speculation, or doubt (*sanśaya*). Such a *hetu* is obviously fallacious because it infringes the rule that the *hetu* must be definitively present only in *sapakṣa*s and definitively absent in all *vipakṣa*s.

The logical predicament that the *Nyāya-Vaiśeṣika* argument suffers from, according to DK's and DU's analysis, is said to be peculiar to it because it is due to the dichotomy involved in it, more specifically, the dichotomy of the selfful and the selfless. But it seems to me that this type of dichotomy is a characteristic feature even of an argument which is valid according to DK's logic, or rather, according to every logic. Take, for example, the well-worn argument:

That hill has fire
because
It has smoke.

Here the *sapakṣa* would be a thing which is different from the hill referred to by the *pakṣa* and which has fire, for example, a kitchen. The *vipakṣa* would be a thing which does not have fire, for example, a lake. That is, the *sapakṣa* would be a fiery thing and the *vipakṣa* a non-fiery one. The fiery and the non-fiery too constitute a dichotomy. Everything must be either fiery or non-fiery; it must have, or not have, fire. Nothing can be both, nor neither, of the two. Therefore, if the dichotomic character of the *sapakṣa* and *vipakṣa* make it impossible to establish the required positive, and therefore the negative, *vyāpti* of the *Nyāva-Vaiśeṣika* argument, it would do that in the case of every argument. And, therefore, it would make every argument invalid by making every *hetu* suffer from the peculiar variety of non-exclusive (*asādhāraṇa anaikāntika*) *hetu* from which the *Nyāya-Vaiśeṣika* argument is said to suffer from, by DK.

DK and DU, thus, do not completely succeed in showing that the *Nyāya-Vaiśeṣika* argument for the self commits the fallacy of a unique non-exclusive *hetu* (*asādhāraṇa anaikāntika*). But that does not mean that the argument is valid, or non-fallacious. It may be invalid for some other reason. It also does not mean that a *hetu*, whose presence only in *sapakṣa*s and absence in all *vipakṣa*s are doubtful is not a fallacious *hetu*. My criticism only shows that the example of the argument chosen by DK to illustrate this fallacy is not the right one and also that the technical formulation of the fallacy, as given by him and DU, needs to be modified in some way. It has to be in order that the dichotomic character of the *sapakṣa* and the *vipakṣa*, true of all inferences, does not create any problem

in attributing doubtfulness to the *hetu*'s presence in all the *sapakṣa*s and absence in all the *vipakṣa*s.

3. (c) (v) DK's Reason for the Non-inclusion of the Counter-probative (*Viruddha*) Non-erratic (*Avyabhicāri*) *Hetu* among the Varieties of Non-exclusive (*Anaikāntika*) *Hetu*.

DK does not admit any other variety of non-exclusive *hetu*, in addition to the ones which have been discussed in the last few pages. His non-inclusion of what Dignāga calls a counter-probative valid (*viruddha avyabhicāri*) inference and includes in his list, needs to be explained because this kind of inference is also said by some to produce, as other varieties of non-exclusive *hetu* do, in the mind of the inferer, or of the addressee, some doubt or uncertainty about the truth of its conclusion, or about what exactly is the state of affairs referred to by the conclusion.

This kind of inference is valid because its *vyāpti* is exceptionless (*avyabhicāri*) in the sense that there is universal concomitance between its *hetu* and its *sādhya*. It is counter-probative (*viruddha*) because it yields a conclusion which is contradictory of, or incompatible with, the conclusion of another valid inference. It thereby creates a serious uncertainty in the mind of the person, who knows both the inferences, about which one of the two opposite conclusions he should consider true. He finds it very difficult to decide because both the conclusions have been yielded by valid inferences. DK's reason for its non-inclusion in his list is that in a genuine, *bona fide*, inference, it is impossible to commit it,[28] and the inferences in which it may be committed are not from the practical or logical, point of view, very important. His reasoning on this matter, as presented by him as well as in its elaboration by DU is a little too complicated, but the point it makes is quite straight and convincing. I would try to present it in a simplified form without sacrificing any element of its rigour, and without misrepresenting DK's intention behind his not giving to *viruddha avyabhicāri* any place in his classification of the different forms of non-exclusive *hetu*.

The central thing in any genuine inference, according to DK, we have seen, is the *hetu vākya* (HV), the conjunction of the three conjuncts, asserting that the *hetu* is necessarily present in the *pakṣa*, present only in the *sapakṣa*, and never present in the *vipakṣa*. This conjunction has to be a true,

[28]SNS, NB, p. 326.111.

empirically confirmed, statement about a certain state of affairs, that is, about some reality. In fact, to state any HV, say, to state that

> Wherever there is smoke, there is fire,
> and wherever there is no fire, there is no smoke
> and there is smoke on that hill,

is to make the claim that reality is such that, or a particular sector of reality is such that, wherever there is smoke, there is fire and wherever there is no fire there is no smoke and there is smoke on that hill. The HV, the statement of the three-featured *hetu*, of every inference has to be a true description of a certain state of affairs, established by the right use of a *pramāṇa*.[29] The conclusion entailed by it must therefore be true, that is, true of reality. The conclusion of the above HV, 'There is fire on that hill' says, in effect, that the reality itself is such that there is fire on that hill. A fallacy can arise, as shown in the preceding pages, only when one, or more than one, of the three conjuncts is not true, or is not definitively true, that is, is doubtful. But when the HV is faultless, its conclusion must be true. Therefore, a valid inference cannot yield a false or doubtful conclusion.

At this point DK makes use of an idea which he holds but does not explicitly state. The idea is that in the framework of the same logical theory it is not possible that one valid inference yielding a conclusion, positive or negative, which is contradictory to the conclusion of another valid inference. If we admit that it is possible, we would have also to admit that two propositions which contradict each other can be empirically true, that is, true of the empirical reality concerned. I have shown above that the conclusion of a valid inference, as per DK's theory of inference, is not just verbally true but true of the reality it is relevant to. Two propositions which contradict each other, yielded by two valid inferences as their conclusion, cannot be true, or cannot be true of any empirical object or situation. Nothing real has contradictory features; nothing can have two properties one of which is the opposite of the other. Therefore, of the two HV's proving two contradictory propositions, one of them must be untrue, defective, or fallacious in some way. Therefore, one of the two apparently valid arguments, yielding two contradictory conclusions, must be impermissible for a good reason.

DK's main ground for rejecting the view that one valid argument can yield a conclusion contradicting that of another valid argument, is,

[29]SNS, NBT, pp. 326–27.

as said above, that reality does not have contradictory features on account of which two contradictory propositions can never be true. But they would have to be accepted as true if logic permits them to be yielded by two valid arguments. His own solution to this problem is that a counter-probative valid (*viruddha avyabhicāri*) argument, that is, one which is valid and yields a conclusion contradictory of that of another argument confirmed to be valid, is not as per his logical theory, or any sound logical theory, possible.

DK's point can be made perhaps more easily by using the criterion of the consistency of a logical theory or system given by the American logician, E.L. Post. Any logical system must be consistent. A system is consistent, says Post, when it is not possible to prove in it both a proposition, P and its denial, not -P. If it is, the contradiction 'P and not -P' would be true in it. A contradiction entails everything. Therefore, if a logical system allows the proving of a contradiction as true, it would have to allow proving any absurdity true, and therefore would forfeit its right to be called a *logical* system. Even without referring to reality, to saying that reality does not have contradictory features, or does not allow contradictory states of affairs to hold good, DK could have said that, while using the same notion of validity or of a *hetu*, in both the cases, a logical theory cannot permit one valid argument to prove P to be true and another valid one to prove not-P to be true. If it does, then it would have to admit 'P and not-P' to be true, and therefore to admit anything and everything to be true, howsoever absurd or meaningless it may be. Obviously, there would be no point in propounding such a logical theory.

According to DK, in a normal inferential exercise, when we ratiocinate about some empirical matter and use the right kind of *hetu*, it is not possible to prove one proposition by one valid inference, and its contradictory proposition by another valid one. This is the case with the use of any one of the three types of *hetus* only, which he admits to be the right kind of *hetus*, namely, the *Kārya hetu*, *Svabhāva hetu* and *Anuplabdhi hetu*. The *hetu* used in any inference, whether it is a *Kārya hetu*, *Svabhāva hetu*, or *Anupalabdhi hetu* is determined by the relevant empirical facts. For example, only after it is confirmed by experience that where there is smoke, there is fire, and where there is no fire, there is no smoke, we treat the presence of smoke at a place as the *hetu* for inferring the existence of fire there. Since experience confirms that no object or situation has contradictory features, and all of the three types of *hetus* are based on empirical facts, it is not possible to have a valid inference which is counter-probative in the sense that it proves a conclusion, that is, a proposition to be true which goes counter to, or contradicts, the conclu-

sion, another proposition, proven true by another valid inference. It is not possible because it is not possible for two mutually contradicting propositions to be true.

A counter-probative inference may occur, he says, when its inferer is motivated by considerations which are not based on empirical facts or when one ratiocinates about a matter which is not an empirical matter but is held to be real by some philosophical tradition, and uses a method of inference based on the logic prevalent in the corpus of that philosophical tradition (*āgama*). It is in such cases alone that the fallacy of counter-probative reason (*viruddha avyabhichāri*) may sometimes occur.[30] DK thinks that even Dignāga, when he speaks of it, has in his mind its use in arguing for or against such subjects which are not empirical and have been handed over to us by some philosophical or non-philosophical tradition (*āgama*).

In any argument concerning such a matter, the universe of discourse or context, DU adds, is provided by the traditional corpus concerned, and even the three features of the *hetu* used are determined by the same corpus. The method of reasoning prevalent in the tradition is used, and in using it one may commit the fallacy which Dignāga calls counter-probative (*viruddha avyabhicāri*). It is to this area of ratiocination to which Dignāga limits the possibility of the occurrence of this fallacy, and does not extend it to the empirical inferences DK talks about. Therefore, DK's non-inclusion of the fallacy in his list of fallacies, DU says, does not make his list incomplete, nor does it show any serious disagreement between him and Dignāga.[31]

In respect of such non-empirical subjects, according to DK and DU, it is possible to give antinomial or sophistical, arguments, one argument proving the contradictory of what another has proved and both of them having the appearance of a valid argument. The (alleged) reality of universals is, according to them, one such subject.

DU says that the sage Kaṇāda holds that a universal is inactive, perceivable and a unity. From this assertion of his, Pailuka, a disciple of his, with the intention of advancing his doctrine further, brings out the following *viruddha avyabhicārī* inference (VAI):

(VAI) (a) Whatever is simultaneously inherent in all the things it is related to, wherever they are located, is present in all of them, for example, the sky,
and

[30]SNS, NB, p. 328.114.
[31]SNS, NBT, p. 329.39.

A universal is simultaneously inherent in all the things it is related to, wherever they are located. (Therefore, a universal is present in all the things it is related to.)

Another disciple of the same sage, Paithara, with a similar intention, brings out from his saying another argument with a conclusion which contradicts the conclusion of (VA1) (a):

(VAI) (b) Whatever is perceivable and is not perceived at a certain place, is not present there, for example, an absent jar, and
A universal is perceivable and yet is not perceived in any of the individuals it is claimed to be related to.
(Therefore, a universal is not present in any of the individuals it is claimed to be related to.)[32]

Both (VAI) (a) and (VAI) (b) are valid, and the conclusion of one contradicts the conclusion of the other. Therefore, the *hetu* of each one of them is a counter-probative *hetu*, and each one of them is a counter-probative inference. It has been possible for the two disciples to bring out two formally valid arguments, one disproving what the other proves, because: (1) Kaṇāda has characterized a universal in an erroneous manner, and (2) the two disciples have analytically derived their arguments from two different features of their master's characterization. Their fault is that they have not tried to attend to the facts of the case, to the empirical things which are true of a universal. They have not tried to check with empirical realities whether or not their master's characterization is a true account of the nature of a universal. The lesson which DK and DU want to convey is that an idea or doctrine contained in the corpus of a tradition, howsoever respectable, or ancient, should be accepted only after an examination of its faithfulness to the empirical realities it is about, and not without that, that is, not dogmatically.

DK and DU have used (VAI) (a) and (VAI) (b) simply as examples to explain the working of a *viruddha avyabhicāri hetu* or inference and not to present a textually accurate account of a doctrine of Kaṇāda, or of the two arguments of his two disciples. Kaṇāda might not have said what DU says he has said and there might not have been two real individuals named 'Pailuka' and 'Paithara'. But all this would not weaken DK's and DU's logical point that an uncritical acceptance of a doctrine held by a tradition, without checking its tenability with the relevant facts, may lead to such antinomies. Some scholars do hold that Kaṇāda does not

[32]SNS, NB, & NBT, pp. 329–39.

really say what has been attributed to him and that Pailuka and Paithara are fictitious names. We can then take DK's and DU's explanation of the use of a counter-probative *hetu* as one presented with the help of hypothetical or imaginary examples. Doing that is standard philosophical practice and therefore their explanation cannot be considered faulty for just using such examples.

3. (d) The Fallacy of the Contrary (*Viruddha*) Logical Reason

The *hetu* of an inference as stated, that is, the premise, which is nothing but the complete statement of the *hetu*, is given, in order to prove its conclusion. The conclusion asserts the presence of the *sādhya* in the *pakṣa*. A faultless *hetu* entails, or proves, that this is really the case, that the *sādhya* exists in or is true of, the *pakṣa*. Therefore, if a particular *hetu* does the opposite of it, that is, if it entails or proves, that the *sādhya* does not exist in, or is not true of, the *pakṣa*, it would obviously do what it ought not to do. It is this sort of a *hetu* which DK calls the contrary (*Viruddha*) *hetu* because it proves false what it is intended to prove true. A *hetu* functions in this way, says DK, when it goes counter to the rule that it should be present only in things similar to the *pakṣa* and never present in things dissimilar to it, that is, when it is absent in similars and present in dissimilars.

He illustrates it with the following example:[33]

That thing is eternal
because
It is an effect, or a thing produced after
someone's effort (to produce it).

3. (d) (i) Two Varieties of the Contrary Logical Reason

In the above argument two *hetus* have been disjunctively given. Therefore, it is equivalent to two arguments in one of which 'being an effect' is the *hetu* and in the other 'being produced after someone's effort' is the *hetu*, and the two arguments illustrate two types of contrary reason.

Suppose someone gives the argument with 'being an effect' as the *hetu*:

Sound is eternal
because
It is an effect.

[33]SNS, NB, p. 299. 82–83.

Here 'sound' stands for the *pakṣa*. Its *sapakṣa*s, similars, would be the other eternal things. Its *vipakṣa*s, dissimilars, would be things which are non-eternal. The basic rule of inference, as already said, is that the *hetu* must be present only in similars and absent in all dissimilars. But the reverse of it is the case with the *hetu* 'being an effect'. Nothing which is an effect is eternal, and every non-eternal thing is an effect. The *hetu* of this argument, therefore, is the opposite of what a genuine *hetu* is. The true *vyāpti*, the universal proposition stating its relation with the *sādhya*, eternality can be stated as follows.

Whatever is an effect is non-eternal and whatever is eternal is a non-effect. The PV,

Sound is an effect

combined with this *vyāpti* yields the conclusion,

Sound is non-eternal

which is the contrary of,

Sound is eternal

to prove which the *hetu*, 'being an effect', has been given. This shows that the *hetu* of this inference is a contrary, or a counter-probative, *hetu*.

The other argument with 'being produced after someone's effort' as its *hetu* also suffers, according to DK, from an identical, or a similar, fallacy. DU[34] holds that by 'being produced after someone's effort' here DK means being known after someone's effort. It does not mean being originated, or being caused to come into being, after someone's effort because the latter idea, according to the master, has already been conveyed by calling the *pakṣa* an effect. With this meaning too, DU thinks, the *hetu* would be absent in all *sapakṣa*s and present in all *vipakṣa*s. Let us see if it would.

Whatever is known to anyone, no matter whether it is eternal or non-eternal, is known to him after his having made some effort to know it. Therefore, the *hetu* 'being known after someone's effort' is true of every known thing. From a thing's being known to someone after some effort, we can only infer the disjunctive 'It is eternal or non-eternal', and not any one of the two disjuncts. When fully stated, the HV of the argument having it as its *hetu* would be:

[34]SNS, NBT, p. 300.

> Sound is known after some effort and whatever is known after some effort is eternal or non-eternal and whatever is neither eternal nor non-eternal is not known after some effort.

The conclusion of this HV would be:

> Sound is eternal or non-eternal

which is very different from,

> Sound is non-eternal.

The *hetu* would have been a contrary *hetu* only if it would have entailed the latter and it is not because it entails

> Sound is eternal or non-eternal.

The argument would still be invalid because it does not entail:

> Sound is eternal

to entail which it is given. It is invalid because it is true of both eternal and non-eternal things, of *sapakṣas* as well as of *vipakṣas*. Therefore, the resulting fallacy, in trying to prove the eternality of sound on the ground of its being known to anyone after his having made an effort to know it, would suffer from the fallacy of non-exclusive (*anaikāntika*) *hetu*, and not from that of contrary (*viruddha*) *hetu*, as wrongly claimed by DU.

Durbeka Miśra[35] interprets 'being produced after someone's effort' to mean being caused or effectuated after someone's effort, and not as DU does. This *hetu* is used by DK, according to him, to illustrate the commission of the fallacy of contrary logical reason on a different level from that of the commission of the fallacy in the use of the property of being an effect as the *hetu*. The latter is absent in all eternal things and present in all non-eternal things. Therefore, it is a straightforward *viruddha hetu*. The property of being produced after someone's effort is also absent in all similars, that is, in all eternal things. But it is not present in all non-eternal things, the dissimilars. It is present only in some non-eternal things, for example, in a jar.

It is not present in some others, for example in lightning. Both, a jar and an occurrence of lightning, are non-eternal. But the former is produced after someone's effort to produce it, whereas the latter is produced without

[35]Ibid., pp. 300–301.

anybody's effort to produce it. Therefore, the property of being produced after someone's effort is absent in all similars but present in only some dissimilars. Therefore, it is a *viruddha hetu,* but works on a different level from that on which the property of being an effect works. To illustrate these two different levels on which a *viruddha hetu* may work, DK mentions, according to Durbeka Miśra, the disjunction of these two, and not just one of them.

With Miśra's interpretation in mind, we can state the argument as:

> Whatever is produced after someone's effort, is non-eternal and sound is produced after someone's effort.

Its conclusion would be:

> Sound is non-eternal,

which is the denial of 'Sound is eternal' to prove which the argument has been given. Therefore, its *hetu* may be said to be a contrary *hetu.* But it has become a contrary *hetu* here only because it is absent in all *sapakṣas.* It is not present in all but only in some *vipakṣas* and we have not made use of its presence in them in deriving the conclusion. This means that if a *hetu* is absent in all *sapakṣas,* that is enough to make it a contrary *hetu* entailing the denial of the intended conclusion. Its absence in all *sapakṣas* does not mean its presence in all *vipakṣas.* We cannot derive the latter from the former.

When the *hetu* is absent in all *sapakṣas,* it is possible that it is not present in all *vipakṣas.* Durbeka Miśra's point is that this is actually the case with the property of being produced after someone's effort, the *hetu* being discussed here. It is not present in all non-eternal things. It is present only in some of them and absent in some others.

To conclude, we can say that, as per Durbeka Miśra's interpretation, according to DK, any *hetu* is a contrary *hetu* if it is a means to proving the denial of the conclusion it is offered to prove. It functions in this self-destructive, or self-denying, way when it is absent in all *sapakṣas* and present in all *vipakṣas,* or absent in all *sapakṣas* and present in only some *vipakṣas.* But we have seen that it works as a contrary *hetu,* that is, proves the denial of the intended conclusion, even if it satisfies only one condition, that is, if it is absent in *all sapakṣas,* no matter whether or not it is present in all or some *vipakṣas.* I would add, therefore, that DK could have given a more simple definition of *viruddha hetu* by saying that any *hetu* is a *viruddha hetu* if it is absent in all *sapakṣas.* This is true of both the examples given by DK. The property of being an effect, as well as that of being produced after someone's effort is absent in all *sapakṣas.* Both of them prove in the *pakṣa* the presence of non-eternality, which is the opposite of the *sādhya,*

eternality. They have been offered to prove that eternality is present in sound, that sound is eternal, but they prove that non-eternality is present in sound, that sound is non-eternal. Therefore, both are contrary *hetus* for the same reason,[36] in spite of there being some difference in their relation to the *vipakṣas*.

3. (d) (ii) The *Hetu* Entailing the Contrary of an Unexpressed *Sādhya* not a Third Type of Contrary *Hetu*

DK holds that there is no need to admit any other kind of contrary reason besides the two types illustrated by his examples (of being an effect and being produced after someone's effort). But Dignāga has mentioned a kind which seems to be different from DK's two examples. Dignāga calls it the *hetu* which entails the opposite of the intended (*iṣta*), though not expressed (*anukta*), *sādhya*. DK's two examples show how a contrary *hetu* proves the opposite of a *sādhya* which is the verbally expressed *sādhya* of the argument. In both of the cases which he has given, it is explicitly stated that sound is being proven to be eternal. The *hetu* used to prove it, in the first case, is the property of sound's being an effect (*kāryatā*), and in the second case it is the property of sound's being produced after someone's effort to produce it. The kind of *hetu* which Dignāga refers to also performs the same role, but the *sādhya*, whose negation is proves, is only an intended but unexpressed *sādhya*. He calls it the contradictor, or disprover of the intended (*iṣtavighātakṛta*).

DK's reasoning is that an unexpressed *sādhya* and an expressed *sādhya* do not differ as *sādhyas*.[37] Whether we verbally express or leave it unsaid or understood, if we want to prove that something is present in the *pakṣa*, the latter is our *sādhya* in the same sense, or to the same extent, in both the cases. A *hetu* which proves the absence of that thing in the *pakṣa* does the same logical job, no matter whether it has been explicitly said, or left unsaid, that the presence of that thing in the *pakṣa* is what is to be proven, or is the *sādhya*. According to DK, there is no justification for admitting a separate category of contrary reason in the form of one which proves the contrary of the intended, unexpressed, *sādhya* because it is covered by one or the other of his two types.[38] DK is right in saying this because the difference between an expressed and an unexpressed *sādhya* is only a linguistic, or psychological, difference, and not a logical one. Therefore, the logical fallacy from which a *hetu* suffers, on account of its being a

[36]SNS, NB, p. 301.85.
[37]Ibid., p. 307.92.
[38]Ibid., p. 305.90.

means to proving the contrary of the *sādhya* is of the same kind in the two cases.

As an example of an argument in which the *sādhya* is not explicitly stated, and is denied by the *hetu* used, the following is given:

> Eyes, etc. are means for the use of another (*parārtha*)
> because
> They are composite (*sanghāta*) things, like a bed, an object for sitting on, etc.

This is in brief a *Sānkhya* argument for proving that the self, the *Puruṣa*, is non-composite. The *vyāpti* assumed is:

> Whatever is a composite thing is (ultimately) a means for the use of another (which is non-composite).

Since the eyes, etc., are composite and therefore means for the use of another, the reasoning proceeds, there must be another being which is non-composite. That non-composite being, according to the *Sānkhya*, is a self. The intended conclusion of this argument, therefore, is:

> Eyes, etc., are means for the use of another
> being which is a non-composite self.

But the conclusion as stated is:

> Eyes, etc., are means for the use of another.

Therefore, the intended conclusion is not fully expressed because a part of it is left unsaid.

DU tries to show that the *hetu* of this argument, compositeness, proves that the other, the self, for the use of which eyes, etc. are said to be the means, is composite, the opposite of what it is claimed to prove. Therefore, it is a contrary *hetu*. A composite thing is said to be a means for the use or utilization (*upakāra*) of another. That which is a means, a thing used or utilized by another is the cause or producer (*utpādaka*) of the latter, and the latter is its product or effect (*utpādya*). Whatever is an effect *(utpādya)* is either produced as something composite, or gradually becomes composite. Therefore, the statement that eyes, etc. are means for the use of another proves that the being, the alleged self, for whose use they are the means is composite.[39] But this is the opposite of what the statement

[39]SNS, NBT, p. 304.

has been given to prove. It has been given to prove that the self by which eyes, etc., are used or utilized, is non-composite. Therefore, the argument suffers from the fallacy of contrary *hetu* (*viruddha hetvābhāsa*).[40]

I do not deny DK's claim that leaving the *sādhya* unstated, or incompletely stated does not alter the character of the fallacy of a contrary *hetu* which it suffers from if it really suffers from that. But I want to point out that DU's demonstration of the fallacy in the *Sānkhya* argument is not conclusive. His demonstration assumes that a means produces, or is causal factor of, that for which it is a means. But this is not always true. A hammer is a means a man uses to drive in a nail. But it does not produce, or compose the man, the user. It is not a causal factor of his being what he is before or after he has used it, or even while he is using it. It is this assumption which enables DU to prove that a self, which is said to make use of eyes, etc. is produced by them and is therefore an effect and consequently is composite. The moment this assumption is rejected or considered questionable, DU's demonstration that a self is composite becomes inconclusive. With its becoming inconclusive, his demonstration that the argument suffers from the fallacy of using a contrary *hetu* also becomes inconclusive. I am not saying that the *Sānkhya* argument is valid. It is defective in so many ways, but this is not the place to show that. I want only to show here that DU does not succeed in demonstrating that it is a case involving the use of a contrary *hetu*. This weakness of his demonstration is not unimportant because he does not illustrate the commission of this fallacy by any other fallacious argument the *sādhya* of which is unexpressed.

4. DK's not Mentioning the Possibility of an Argument, having a Faultless Set of Premises, becoming Invalid only because of its Conclusion's Infringing a Rule of Inference

DK does not consider the possibility of an inference becoming fallacious, or a misinference, only because of its conclusion's violating a rule of inference, though all of its premises are non-defective. Aristotelian logic admits this possibility. For example, the argument:

All mangoes are seasonal.
All mangoes are fruits.
Therefore, all fruits are seasonal

[40]Ibid., pp. 303–6.

is fallacious only because of the infringement of a syllogistic rule by its conclusion. The logically justified subject of the conclusion is 'Some fruits', and not 'All fruits' which it has. In Aristotelian terminology, the minor term, 'Fruits' is distributed in the conclusion but it should not have been because it is undistributed in the minor premise. This fault of the conclusion, that is, its infringing the rule that no term should be distributed in it if it is undistributed in all the premises, leads to its committing the fallacy of illicit minor, and it alone makes the argument fallacious, even though both of the premises are perfectly in order, committing no fallacy. DK does not seem to have realized the possibility of an inference becoming fallacious only because of its conclusion having violated some rule of inference, even when its *hetu* has all the three features required of it. Even other classical Indian logicians do not seem to have done that. That is why there does not seem to exist any device in his logic, or in classical Indian logic to prove that the above argument is fallacious, or even to characterize the fallacy which it commits, though it is undoubtedly invalid.

DK does give a set of conditions whose non-fulfilment by a proposition disentitiles it to become the conclusion of any inference (see Chapter 2). But they do not include the rule which the conclusion of the above argument violates. In fact, it does not infringe any one of DK's conditions. It may even be true. And, even if it is, the argument would remain invalid beause of its violating the rule of distribution.

If the argument is modified by replacing its conclusion, which is a universal proposition, by a particular one, in its modified form:

All mangoes are seasonal.
All mangoes are fruits.
Therefore, some fruits are seasonal,

it would, according to Aristotelian logic, be valid. Modern logic would consider it invalid because both the premises are universal and therefore non-existential. But the conclusion, being a particular proposition, is existential, and therefore, it cannot follow from them. It may be urged here that, according to DK, or classical Indian logic, it is an ill-formed, an impermissible, argument because its conclusion is indefinite on account of its being a particular proposition. As Datta says, Indian logic does not allow in any inference, the use of the particular proposition because it brings indefiniteness in the inference it occurs in.[41] But this is an epistemological, and not a logical, reason for calling the argument

[41]D.M. Datta, *The Six Ways of Knowing* (Calcutta University, 1972), p. 220.

impermissible. It is to the effect that, since inference is a means, or form, of definitive knowledge, it must not have any particular proposition, which is indefinite, as a premise, or as its conclusion, because the inference, which has it, cannot yield any definitive knowledge. The modern logic's reason, in contrast with it, for calling invalid an argument, which has only universal propositions as its premises and a particular proposition as its conclusion is logical. It is to the effect that an existential proposition cannot be inferred from a set of non-existential propositions. Therefore, a particular proposition, being an existential one, cannot be inferred from a set consisting only of universal propositions because a universal proposition is non-existential.

A short note on Datta's conception of the indefiniteness of a particular proposition may not be amiss here. The particular proposition 'Some S is P' is indefinite because it does not say which S is P and therefore may not be of definite help to one who wants to choose an S which is P. This is our ordinary common sense understanding of the indefiniteness of 'Some S is P'. But he does not refer to this sort of indefiniteness. Rather, he says that 'A particular proposition, like 'Some S is P', when stripped of its quantifying mark, is found to be nothing but 'S may be P''. And, 'S may be P' is according to him, indefinite, or not definite enough, and therefore is unusable in an inference considered valid in classical Indian logic. He concedes in the same paragraph, however, that 'The only great value the particular', 'Some S is P', may possess is that it may contain the definite knowledge that may be expressed also as a universal, namely, 'S is compatible with P''.[42]

Three comments seem to be called for here. Firstly, 'S is P', obtained by dropping the quantifier 'Some' from 'Some S is P', does not mean, but implies, 'S may be P'. 'S is P' is assertovic asserting that S, in fact, is P. 'S may be P', on the other hand, is not; it is only problematic. It does not rule out S's not being, in fact, P, as 'may' also includes 'may not'. Secondly, after dropping the quantifier 'All', even the universal 'All S is P', becomes 'S is P' and meets with the same fate 'Some S is P' meets with after 'Some' is dropped from it. Any proposition is particular or universal because of the quantifier used to quantify its subject. Therefore, there is not much point in questioning the usability of the particular proposition in inference because of its becoming problematic when stripped of the quantifier of its subject. If this procedure is considered proper, then even the universal proposition would become disqualified for that job and for exactly the same reason for which the particular becomes disqualified.

[42]Ibid.

Thirdly, 'Some S is P' does imply that S is compatible with P but it is not equivalent to the latter. It is not, because it may be true that S is compatible with P, though no S is in fact P. A thing's being a mountain is compatible with its being golden, but it is also true that no mountain is golden. Compatibility of S with P only rules out the impossibility of S's being P; it does not imply the facticity of even a single S's being a P. All this is true of 'S may be P'. Therefore, 'S may be P', as well as 'S is compatible with P' is less definite, more vague, than 'S is P', and much less definite, much more vague, than 'Some S is P'. Hence, on the ground of the possibility of the latter's conveying that S is compatible with P, it cannot be said, as Datta does, that 'Some S is P' may contain some definite knowledge because the former does not convey anything more definite—rather, what it conveys is less definite—than what the latter by itself does or would have done without conveying it.

In any inference for someone else, according to DK, its conclusion need not be mentioned. This may be the reason for his not considering the possibility of the faulty conclusion of an otherwise well-formed inference making the inference invalid. But it is possible that its demonstratee may draw a faulty conclusion, or one which does not follow from the premise. Then, there must be a mechanism to show to him that under such and such conditions a conclusion becomes faulty and its being faulty makes the inference invalid even when there is nothing wrong with the *hetu vākya* (HV), the statement of the three-featured *hetu*.

In the case of an inference for oneself, the conclusion is the first thing which occurs to the inferer. It is thereupon that he starts reasoning back, that is, retroactively to its HV, the set of its premises, which provides the required logical support to assure him of its truth. Here, too, it is possible that he reaches back to a faultless HV from which his conclusion does not follow because of something wrong with it. Therefore, here, too, should be available a rule whose violation by the conclusion is sufficient to make the inference fallacious or invalid, even when there is nothing wrong with the HV. Otherwise, it would not be possible to prove invalid, in terms of DK's logic, an invalid argument of the type we are presently discussing.

Perhaps DK assumed that in an inference for someone else, when a complete and correct HV is given, the addressee would draw from it only that which logically follows from it, and that when in an inference for oneself one reasons back to the required HV, he would reach back to only that HV which would support, that is, entail the idea or proposition, the occurrence of which has led him to search for it. But this would not be a plausible assumption. It cannot be assumed that an error can be

committed only in stating the HV, the three features of a *hetu*, that a fallacy would always be a *hetu*-fallacy. It is not impossible that one commits the error of drawing a wrong conclusion from a right HV, since there is no cogitative, or, ratiocinative zone in which no error can be committed.

But suppose somebody says that the argument:

All mangoes are seasonal.
All mangoes are fruits.
Therefore, all fruits are seasonal,

is not in the form prescribed for a PA by DK (or classical Indian logic) and the fallacy it involves is because of its being in this form. This would not justify DK's characterization of inferential fallacies. Rather, it would show that his characterization is incomplete because it cannot account for the fallacies committed by all forms of invalid inferences. Moreover, the problem posed by the faulty conclusion of this argument can also be posed by an argument in the form prescribed by DK for PA.

Let us take the PA:

(a) The hut there has smoke, and
(b) whatever has smoke has fire, for example, a kitchen, and
(c) whatever does not have fire, does not have smoke, for example, a pond.

Its right conclusion is 'The hut there has fire'. But, suppose, A draws from it the conclusion 'All the huts there have fire'. How would we prove, using DK's logic that he has committed a fallacy? And, how would we characterize his fallacy? Any advocate of the prevalent, received interpretation of PA—the interpretation of PA as Barbare and of a singular proposition as a universal proposition—cannot attribute to A the error of inferring a universal proposition when he should have inferred a singular one beause all the premises of the above PA are universal since (a) is a singular proposition. He cannot because (a), a singular proposition is also for him universal. He cannot either say that the *pakṣa* term, 'hut', in its occurrence as the subject of the premise (a), is undistributed and in its occurrence as the subject of A's conclusion it is distributed because, according to the interpretation he accepts, it is distributed in both places.

With the conclusion 'All the huts there have fire', the above PA is obviously fallacious, perhaps more obviously than the fallacious Aristotelian syllogism given earlier. And, it is not possible to locate any

hetu-defect in it. In fact, there is no *hetu*-fallacy, no *hetvābhāsa* in it. Rather, what makes it fallacious is the errant conclusion, or more precisely, its not having with the HV the kind of liaison which the conclusion of a valid PA has with its HV. And, for this the HV alone is not responsible. For this, the PA and HV, both, are responsible in the sense that their nature is such that between the two there cannot exist the kind of logical affinity which authorizes anyone to infer the former from the latter. What I want to underline here is the simple logical fact that the validity, or invalidity, soundness or fallaciousness of any inference is a function of the relation between its set of premises, its HV, and its conclusion, and not only of the HV. Therefore, in characterizing inferential fallacies, this relation and therefore both the ends of the relation, that is, the character of the HV, the set of premises, and that of the conclusion, and not only the former, should be given proper weightage. To conclude, some of the problems which DK's account of fallacies raises and does not seem to have a mechanism to solve, as shown in some sections of this chapter, are due to his giving to the HV more importance than it deserves, and to the relation between it and its conclusion less than what the relation deserves.

FIFTEEN

Concluding Overview

After having discussed and examined in the preceding chapters the various aspects of DK's theory of inference, in this, the concluding one, I will present only an overview of the theory so that the reader may see at a glance not only what it is but also that it has a very simple, and therefore an elegant, structure. In the synoptic account that follows, in order to make the structure clearly visible details pertaining to expository as well as critical material, which have gone into the preceding chapters will be avoided.

DK's theory is systematic but not in the manner of a formal, logistic system which has as its building blocks the minimum possible set of uninterpreted primitive terms, axioms, and rules of inference. His is a theory of inference as a means or form of knowledge. But it is developed in such a rigorous and systematic manner that it turns out to be a theory of deductive inference having a very few components or constituents.

Knowledge, for DK, is cognition which is veridical and informative in the sense that it is a true cognition of a hitherto unknown thing or state of affairs. There are two and only two ways of knowing, perceiving and inferring. Both the ways have the same epistemic strength or value which means that each one of the two is as authentic a giver of knowledge as is the other.

Inference is also of two and only two basic types, inference for oneself and inference for someone else. The former is meant for the inferer's own cognitive benefit and the latter for someone else's. Apart from this difference, the two are alike because the conditions which make an

inference valid are the same for both of them. The order in which the premises are put in, one may not be the same as the order in which they are put in the other. But this possibility does not make them different because it is the conjunction of the premises which entails the conclusion. Conjunction is commutative. Therefore it does not matter which conjunct precedes, or comes after, which. Moreover, the purpose for which an inference is drawn plays no role in determining the logical type of the inference concerned.

In every inference something, say, s, is said to be true of something else, say, p, on the ground of the latter's having something else, say, h, and h's having a relation of universal concomitance with s. Here h, which is the bridge connecting p with s, is called the *hetu*, or logical reason or mark. The subject of the conclusion, p, is called the *pakṣa*, and s which is inferred to be true of p the *sādhya*.

Cognition of the *hetu*, h, because of its presence in the *pakṣa*, p, and universal concomitance with the *sādhya*, s, enables the inferer to have the cognition that p has s because it has h. Every *hetu* has three features: (a) it is necessarily present in the *pakṣa*, (b) it is present only in things similar to the *pakṣa*, and (c) it is never present (or always absent) in every thing dissimilar to the *pakṣa*. A thing is called similar to the *pakṣa* if it has the *sādhya*, the thing being inferred to be true of the *pakṣa*, and a thing is called dissimilar to it if it does not have the *sādhya*.

Inference for oneself is not verbalized because it is done by the inferer in the privacy of his own mind. But inference for someone else is verbalized, since only by presenting it in clear and explicit terms can the inferer demonstrate the truth of its conclusion to the demonstratee because of its being entailed by a true set of premises. The set of premises is nothing but the complete conjunction of the three features of the *hetu*. Therefore, using p for the *pakṣa*, s for the *sādhya*, and h for the *hetu*, the complete set of premises entailing that p has s because it has h would be:

(a) p has h, and
(b) whatever has h has s, for example, d, and
(c) whatever does not have s, does not have h, for example d_1.

(b) states universal positive concomitance between h and s, and (c) universal negative concomitance between s and h. Each one of them is called a *vyāpti vākya*, a universal proposition. (b) and (c) are equivalent because (c) is the transpositive of (b). Therefore, both need not be used in the premise. An inference in which only (b) occurs, along with (a), is called similarity-based (*sādharmyavat*) and the one in which only (c) occurs,

along with (a), is called dissimilarity-based (*vaidharmyavat*). A similarity-based inference with the conjunction of (a) and (b) as its premise is equivalent to a dissimilarity-based form of it which has (a) and (c), because (b) and (c) are equivalent. The difference between the two is only linguistic because (b) of the similarity-based is a positive universal proposition, and (c) of the corresponding dissimilarity-based form is a negative universal proposition.

It is not necessary to state the conclusion, 'Therefore, p has s' because it is obvious that the premise-set entails it. An example is added to both (b) and (c) only to show, but not to prove, that each one of them has been arrived at on the basis of an inductive generalization from instances like d and d_1.

To say that the premise-set must be a complete statement of the *hetu*'s three (or two) features is to say that only a true proposition can occur in an inference as a premise, or as a conjunct of a premise. Therefore, the problem posed by a false proposition's implying any proposition does not arise. The conclusion has to be informative, knowledge-yielding because inference is a giver of new knowledge. Therefore, the problem posed by a true proposition's being implied by any proposition, true or false, too, does not arise.

The conclusion of an inference may be affirmative, or negative. When it is affirmative, s is affirmed to be true of p on the ground that p has h. Such an inference is possible only if h depends on s. The relation of dependence could be causal or conceptual. It would be causal if h is the effect of s. It would be conceptual if the concept of h contains the concept of s as a constituent of it. When h is the effect of s, it is called a *Kārya hetu*, an effect functioning as the logical reason for inferring its cause. The existence of the cause of h can be inferred from the existence of h because it is not possible that there is h when there is no s. It is for this reason that presence of fire, the cause, in a place is inferred from the presence of smoke there.

When the dependence between h and s is conceptual, h is called a *Svabhāva hetu*, a *hetu* which implies the *sādhya* because of its just being what it is. The relation between the *Kārya hetu* and the *sādhya* is one of origination or causation because the latter makes the former come into being. The relation between the *Svabhāva hetu* and the *sādhya* is one of partial identity because the concept of the *sādhya* is identical with a part of the concept of the *hetu*. This kind of inference and *hetu* is exemplified when we infer that a particular plant is a tree because it is an *Aśoka* (tree). The concept of being an *Aśoka* (tree) includes the concept of being a tree.

When the conclusion of an inference is a negative proposition, for example, 'p does not have s', it is the non-perception of s in p which works as the logical reason for inferring the non-existence of s in p. But non-perception of only a perceivable (*upalabdhilakṣaṇaprāpta*) object can be a reason for inferring its non-existence. A perceivable object is defined as one which would be necessarily perceived if (a) it exists, and (b) the auxiliary conditions for its perception, like the availability of adequate light, etc. are satisfied. Therefore, when the auxiliary conditions are satisfied at a place and it is not perceived there, it logically follows that it does not exist there. It is in this way that we infer that there is no jar at a certain place when we do not perceive it there. We do that because, since a jar is a perceivable object, it would have been perceived if it were there when all the auxiliary conditions for its perception are satisfied. The *hetu* of such inferences is called *Anupalabdhi hetu* which means non-cognitioin non-perception functioning as the logical reason for inferring non-existence.

Non-perception of an unperceivable object cannot function as the *hetu* for its non-existence. This is so because an unperceivable object would not be perceived even if it exists at a place and all the other necessary, auxiliary, conditions for its perception are fulfilled. It would not be because it is unperceivable. Therefore, its non-existence in a place cannot be inferred from its non-perception there.

In the use of non-perception as the *hetu* for inferring non-existence too, it can be said that the inference is possible because the *hetu* depends on the *sādhya*. Perception of a perceivable object at a place depends on the existence of the object *and* the fulfilment of certain auxiliary conditions there. Therefore, it can be said that its non-perception depends on its non-existence or the non-fulfilment of any one of the auxiliary conditions there. Consequently, when all the auxiliary conditions are known to be fulfilled, its non-perception can be only due to its non-existence. We can say, therefore, that when we infer anything by using something as the *hetu*, the inference is made possible because the inferred, the *sādhya*, depends on the *hetu*, no matter whether the inferred is the existence or non-existence, of a thing, whether the conclusion is an affirmative or a negative proposition.

We now see very clearly how simple and elegant is the structure of DK's theory. It has only one rule of inference, the rule that every inference must have as its premise the complete statement of the three-featured *hetu*, and there is only one type of relation between the *hetu* and the *sādhya*, the relation of dependence of the *hetu* on the *sādhya* which makes possible the deduction of the conclusion from the premise.

There are three and only three types of *hetus*, as mentioned above,

namely, *Kārya hetu*, *Svabhāva hetu*, and *Anupalabdhi hetu*. Therefore, there would be three and only three kinds of inferences depending on the kinds of *hetus* used. In each one of the three kinds, the conclusion deductively follows from the premise-set. Therefore, the theory has to have the inner tension between its claim that inference gives new knowledge and its making every inference deductive. Even in the inference of a cause from its effect, the inference is said to be as necessary or strong as it is in the case of inferring the constituent of a concept from the complex concept whose constituent it is. And, in the case of a negative conclusion, perceivability of an object is so defined that from the non-perception of a perceivable object, when all the auxiliary conditions for its perception are satisfied, its non-existence is deductively inferred from its non-perception.

It is a simple theory, that is, a theory unincumbered with too many components, because it has only one basic rule, the rule that every inference must have a three-featured *hetu*. To say that it must have such a *hetu* is the same as saying that the premise of an inference must have three (or two) components, each one of which is a statement of a feature of the *hetu*. To protect brevity, the mention of the conclusion is made unnecessary.

The *pakṣa vākya*, the conjunct of the premise which states the presence of the *hetu* in the *pakṣa*, is always a singular existential proposition. It is positive, if the form 'p has s', or 'There is s in p', (or 'p is s') in an inference having a *Kārya hetu*, or a *Svabhava hetu*. These two are the only forms of inferences giving an affirmative proposition as the conclusion. In an inference having a negative proposition as its conclusion, the *pakṣa vākya* must be a singular, negative, existential, proposition, for example, 'there is no jar perceived at p'. It is because of the *pakṣa vākya* being singular and existential that the conclusion is also singular and existential. It is affirmative when the *pakṣa vākya* is affirmative, for example, 'There is fire on that hill', or 'That plant (*Aśoka* tree) is a tree'. It is negative when the *pakṣa vākya* is negative, for example, 'There is no jar at p'. The *paksa vakya* has to be a singular and existential proposition having a definite, singular, particular object, place, or person, as its subject because only in a singular particular, the presence or absence of the *hetu* can be definitively asserted.

Both (b) and (c), the affirmative and negative universal propositions, being a generalization are based on or an induction from singular existential propositions. Therefore, a singular existential proposition is the basic unit of language to convey the presence or absence of the *hetu* in a thing. It is because of this feature of DK's inference that it cannot be called an instance of Barbara which consists only of universal propositions.

It cannot be because a singular existential proposition cannot be called an A proposition, or a universal proposition because it is existential and an A or E proposition being universal is hypothetical and therefore non-existential. For the same reason, the conclusion of an inference also cannot be called universal, an A or E proposition. This sort of inference cannot also be called inductive because its premise-set entails its conclusion while the premises of no induction entail theirs; they only show that the conclusion, the generalization, derived from true instances has a probability of a certain degree to be true. It is not deductive–inductive because the premise of no inference can do both, that is, entail its conclusion and show that it has this or that degree of probability. It can be neither deductive nor inductive because no inference can be.

An inferential fallacy in any theory of inference is the result of the infringement of any of the rules of inference accepted by the theory. DK's theory has only one rule of inference, the rule that the three features of the logical reason must be stated, that is, the premise set or *hetuvākya* (HV) must be a three-membered conjunctive proposition. All the fallacies which it admits of emerge from an infringement of this rule or from some defect in any conjunct of HV. Therefore, according to it, a fallacy occurs only when there is something wrong with the *hetu vākya*, the set of premises. For example, it occurs when one, or more than one part of the statement of the three-featured logical reason is not given, or when any one of the features required of a logical reason is misstated, or is lacking in the logical reason actually used, etc.

The theory does not admit the possibility of an inference becoming fallacious, a misinference, only because of its conclusion's violating some rule of inference, even though its HV, which includes all of its premises is in order. A very likely reason for this omission is the theory's emphatic assertion that the HV, the statement of the three-featured logical reason is all that is necessary for the demonstration of an inference and the equally emphatic, consequential, assertion that it is unnecessary to state the inference's conclusion. In a theory of this type any inferential error, which arises simply from its conclusion's infringing a rule of inference though there is nothing wrong with the set of premises, is naturally likely to remain unattended to.

The validity, or invalidity of any inference is determined by the relation between its premises and its conclusion and not exclusively by its premises. But DK attaches almost exclusive importance to the validity-determining role of the premises, the HV. Therefore, in his zeal to adumbrate his doctrine of the three-featured *hetu*, he does not give the importance it deserves to the role the relation, between the premises and the conclusion drawn from them plays in making the inference valid

or invalid. But an inference may be invalid, even if the premises are completely faultless because of the conclusion's being violative of a relevant rule. This is what happens when, as has been shown, an A proposition is inferred from two A propositions in Darapti of the third figures of Aristotle's syllogism. DK does mention a set of conditions which make a proposition unfit to be the conclusion of any inference. But the conclusion A from AA in Darapti is not vitiated with any one of these conditions and still acts as the villain of the piece in making the inference invalid. A similar situation arises in a PA when one commits the error of drawing from a correct statement of the three-featured *hetu* a proposition whose subject is quantified with a universal quantifier, an A proposition, instead of a singular existential one. There is no *hetu*-fallacy in the inference, yet it is invalid because of the deviant conclusion. There is no device in DK's or in classical Indian logic to prove the invalidity of the inference, or to categorize the fallacy. All this happens because only the HV, the set of premises is thought to be the exclusive hinterland of fallacies. The theory, therefore, needs some modification or augmentation to take care of this problem.

DK's primary motivation in the formulation of the theory is to present a complete theory of inference having the simplest possible logical structure. The success of his attempt depends on the completeness of his threefold division of all possible valid inferences into *Kārya hetu* inference, *Svabhāva hetu* inference, and *Anupalabdhi hetu* inference, based on his claim that there are three and only three types of *hetu*s, or *hetu vākya*s, that is, of premises, which can validly yield a conclusion. We have seen that he, in fact, succeeds in making his theory complete only within a limited zone, more specifically, within the zone of inferences whose conclusions are non-relational, empirical, existential propositions. But his motivation and the attempt at attaining its satisfaction are laudable. The rigorous way in which he develops the theory reveals a number of very valuable insights into the intricacies of deductive reasoning, conducted privately or publicly. Therefore, it is undoubtedly a remarkable specimen of theory-construction in logic. The way Dharmakīrti unfolds it does raise some serious questions central to any logical theory. I think this work has clearly shown that it has an immense potentiality to provoke a sensitive reader to question some of its basic principles, or doctrines, and thereby to think afresh of some basic issues in philosophical and formal logic. This is a decisive proof that it has not become a subject of only the antiquarian's interest, an antique of the philosophical museum, as it or some other classical Indian logical theories, appear in quite a few scholarly historical studies. It is still a rich source for the logician's delight.



Abbreviations and Glossary of Some Important Sanskrit Words Used in the Text

	Adṛśya	Visually unperceivable; in some contexts unperceivable.
	Adhigata	Known
	Anadhigata	Unknown
	Anumāna	Inference
	Anumeya	Generally, (1) inferable, the object to be inferred, or the inferred; in some contexts, (2) the locus of the logical reason, or of the inferred object; in some others, (3) the locus modified with the inferred object. Sense (1) is primary. The sense in which it has been actually used is clear from the context.
	Anupalabdhi	Non-perception, or non-cognition, generally the former.
Ah	*Anupalabdhi Hetu*	Non-perception of a perceivable object functioning as the logical reason for inferring its non-existence.
AHI	*Anupalabdhi Hetu* Inference	An inference whose logical reason is an AH.
AHIS	*Anupalabdhi Hetu* Inference in *Svārthānumāna* form	An AHI in the form of inference for oneself
AHV	*Anupalabdhi Hetu Vākya*	The complete statement of the logical reason of an AHI which is the same as the complete set of the AHI's premises.

	Asapakṣa (= *Vipakṣa*)	Dissimilar to the locus of the logical reason, or of the inferred object.
	Asiddha	Unproven, which may be disproven or doubtful.
	Avisaṃvādaka (= *Avisaṃvādī*)	Uncontradicted, or uncontradictable, by experience.
BLI	Th. Stcherbatsky's *Buddhist Logic*, Vol. I	
BLII	Th. Stcherbatsky's *Buddhist Logic*, Vol. II	
DK	Dharmakīrti	
DU	Dharmottara.	
	Dṛṣṭa	Visually perceived, well-established or confirmed.
	Dṛṣṭānta (= *Udāharaṇa*)	An established example, illustration, or instantiation, particularly of the universal proposition.
	Dṛśya	Visible, visually perceivable, or perceivable
	Dṛśyaānupalabdhi	Visual non-perception
	Ekajñānasansargī	Co-cognizable. Two objects, for example, the absence of a jar at a place and that place, are co-cognizable, *ekajñānasansargī*, in the sense that the act of cognition which cognizes the one also cognizes the other.
	Gamaka	Carrier, that which takes or leads the mind to something else with which it is logically related in a certain way and does not confine the mind to itself. Hence the logical reason is a *gamaka*, a carrier of this sort.
	Hetu (= *Linga, Sādhana*)	Logical reason, or ground. x is the logical reason for inferring z in y if: (i) x is present in y, (2) present only in things similar to y, and (3) never present in things dissimilar to y.
	Hetu, Trirūpa-Triarūpya	Three-featured logical reason. Three-featuredness of the logical reason. The three-features are (1) to (3) mentioned under *Hetu*.
HV	*Hetu Vākya*	The complete statement of the three features of the logical reason, the conjunctive statement having three conjuncts, each conjunct stating one

		feature of the logical reason. The same as the complete set, or conjunction, of the premises, since the concept of the logical reason is the same as that of the set of premises.
	Hetu, Types of:	
	(1) *Anupalabdhi Hetu*	See *Anupalabdhi Hetu.*
	(2) *Kārya Hetu*	An effect functioning as the logical reason for inferring its cause.
	(3) *Svabhāva Hetu*	The presence of a conceptually complex property, say, that of being a teak tree, in a plant, functioning as the logical reason for inferring the presence of a component of that property, say, that of being a tree, in that plant.
	Hetvābhāsa	A defective, fallacious, non-genuine, or pseudo-logical reason, that which appears to be, but is not, a real logical reason.
	Kāraṇa	Cause
	Kāraṇa, Kāraka	Effectuating, or effect-producing, cause, one which by itself produces its effect.
	Kāraṇa, Jñāpaka	That which yields the cognition of the cause of some intended effect, or of attaining a desired object.
	Kārya	Effect
KH	*Kārya Hetu*	See *Hetu*
KHV	*Kārya Hetu Vākya*	The complete statement of a KH: The (effect) E is present in S, wherever there is E, there is (its cause) C, for example, in M, and wherever there is no C, there is no E, for example, in N.
KHI	*Kārya Hetu* Inference	An inference whose logical reason is a KH.
	Linga (= *Hetu*)	See *Hetu*
	Linga, Trirupa	See *Hetu, Trirupa*
NB	*Nyāyabindu*	
NBT	*Nyāyabindutīkā*	
	Pakṣa	The locus of the logical reason, the subject-term of the conclusion, or the thing of which something is inferred to be true. Three ways of identifying the same logical notion.

PV	*Pakṣa Vākya*	The sentence which affirms the presence of the logical reason in the locus, a conjunct of the set of premises, or of the HV.
PA	*Parārthānumāna*	An inference for someone else.
	Pramāṇa	Source, or form, of knowledge.
	Pramāṇa-samplava	Objective inclusivity among the sources of knowledge, meaning that an object cognized by one source of knowledge can also be cognized by another source of knowledge.
	Pramāṇa-vyavasthā	Objective exclusivity among the sources of knowledge, meaning that an object cognized by one source of knowledge cannot be cognized by any other source of knowledge.
	Puruṣārtha	Any object of any desire.
	Puruṣārtha, Heya	An object of a con-desire, an object which one desires not to have (or to not-have).
	Paruṣārtha, Upādeya	An object of a pro-desire, an object which one desires to have.
	Samyak Jñāna	Right knowledge, or knowledge
	Sādhya (= *Anumeya*)	See *Anumeya*
	Sapakṣa	Similar to the locus of the logical reason, or to the subject-term of the conclusion.
SA	*Svārthānumāna*	Inference for oneself.
	Sādharmyavat inference	Similarity-based inference: An inference one conjunct of whose premise is a universal affirmative proposition asserting that the logical reason is present only in the things similar to the locus.
SAH	*Sādharmyavat Anupalabdhi Hetu*	An AH asserted in the premise to be true only of the things similar to the locus.
SAHI	*Sādharmyavat Anuplabdhi Hetu* Inference	An inference whose logical reason is an SAH.
SH	*Svabhāva Hetu*	See *Hetu*
SHI	*Svabhāva Hetu* Inference	An inference whose logical reason is an SH.
SHV	*Svabhāva Hetu Vākya*	The complete statement of the three features of an SH.
SKH	*Sādharmyavat Kārya Hetu*	A KH asserted in the premise to be true only of the things similar to the locus.

SKHI	*Sādharmyavat Kārya Hetu* Inference	Inference whose logical reason is an SKH.
SKHV	*Sādharmyavat Kārya Hetu Vākya*	The complete statement of an SKH, mentioning both of its required features.
SNS	Śrinivāsa Śāstrī	
SPA	*Sādharmyavat Parārthānumāna*	Similarity-based inference for someone else.
SSA	*Sādharmyavat Svārthānumāna*	Similarity-based inference for oneself.
SSH	*Sādharmyavat Svabhāva Hetu*	An SH asserted in the premise to be true only of the things similar to the locus.
SSHI	*Sādharmyaat Svabhāva Hetu* Inference	Inference whose logical reason is an SSH.
SSHV	*Sādharmyavat Svabhāva Hetu Vākya*	The complete statement of an SSH mentioning both of its required features.
St	Th. Stcherbatsky	
	Upalabdhi	Perception, cognition
	Upalabdhilakṣaṇa	Conditions which make an object fit to be, or capable of being, perceived.
ULP	*Upalabdhilakṣaṇaprāpta*	Satisfying all the conditions which make an object fit to be, or capable of being, perceived.
	Upekṣanīya	An object which is non-desired, neither desired to be had, nor desired to be not had, ignorable, or indifferent, a non-*puruṣārtha*.
	Vaidharmyavat Inference	An inference one conjunct of whose premise asserts that the logical reason is never present in anything dissimilar to the locus: A dissimilarity-based inference.
VAH	*Vaidharmyavat Anupalapdhi Hetu*	An AH asserted in the premise to be never true of anything dissimilar to the locus.
VAHI	*Vaidharmyavat Anupalabdhi Hetu* Inference	An inference whose logical reason is a VAH.
VKH	*Vaidharmyavat Kārya Hetu*	KH asserted in the premise to be never present in anything dissimilar to the locus.
VKHI	*Vaidharmyavat Kārya Hetu* Inference	An inference whose logical reason is a VKH.
VPA	*Vaidharmyavat Parārthānumāna*	A *vaidharmyavat* (dissimilarity-based) inference for someone else.
VSA	*Vaidharmyavat Svārthānumāna*	A *vaidharmyavat* (dissimilarity-based) inference for oneself whose logical reason is a VKH.

VSH	*Vaidharmyavat Svabhāva Hetu*	An SH asserted in the premise to be never present in anything dissimilar to the locus.
VSHI	*Vaidharmyavat Svabhāva Hetu* Inference	An inference whose logical reason is a VSH.
	Vipakṣa (= *Asapaksa*)	See *Asapakṣa*
	Visamvādaka (= *Visamvādī*)	Contradicted, or contradictable, by experience.
	Vyāpti	A universal proposition asserting the presence, or absence of the relation of invariable concomitance between two things.
	Vyāpti, Sādharmyavat	An affirmative *vyāpti*
	Vyāpti, Vaidharmyavat	A negative *vyāpti*



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